

A Comparative Study on Shopsyavvy: A Website for Price Comparison

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ABSTRACT – This abstract outline a price comparison website designed to enable customers to compare product costs across multiple e-commerce platforms. The website aggregates product data from various e-commerce sites, such as Amazon, Flipkart, D-Mart, and JioMart, and presents it in an intuitive format for the consumer. Customers, who often seek the lowest prices, typically visit numerous stores to compare costs for the same item. With this website, users can add products to a single basket, compare the total cost across different e-commerce sites, and decide where to make their purchase. In addition to price comparisons, many websites offer user reviews, ratings, product descriptions, and specifications, assisting customers in making well-informed online purchases. The abstract highlights how utilizing a price comparison website can help consumers save money and make wiser purchasing decisions. Furthermore, users can buy products from rapid delivery platforms, which often deliver within an hour, with most products being cheaper thanks to the comparison tool.

Keywords: Price Dispersion, Affordable, Discounted, Comparison, Consumers Expectations

I. INTRODUCTION

The availability of product and shops being viewed by the customers now varies widely online when it comes to e-commerce. This may not make them realize savings in terms of comparison of prices among different stores, despite the convenience and the range that is offered. They may need to spend more time and energy to find the best deal, or they may end up paying more [1].

Price comparison websites are really popular. These are websites that compare prices of the same product at various online and offline vendors and retailers in and around your hometown, thus giving a very easy platform for customers to compare prices. However, problems and limitations are still there and need to be sorted out [2].

This is due to the rise of e-commerce—now there is a giant marketplace where everything is for sale, and following that, entrepreneurs are there to sell. On one hand, this tremendously increases choices for customers; on the other hand, it also complicates the matter of price comparisons and knowing which is the wisest choice. This is where ShopSavvy comes in, giving the customer a single platform for comparing prices between different stores. Although there are a lot of popular price comparison websites, this is an issue yet to be sorted out along with limitations. One is the involvement of merchants in this setup. The number of alternatives provided by the consumers is only limited, though many shops take part in the price comparison websites and some others may or may not do so. The ease of access to the information and the reliability of information is another challenge [3]. Wise buying decisions require consumers with timely, reliable information, yet such seems increasingly difficult to come by: stores can vary greatly in terms of shipping, taxes, and return policies, not all of which are available at price comparison sites. Through availing a list of several prices of the same product by different merchants and supermarkets, Shopsyavvy serves as a means of customers making an informed choice before and in the process of buying goods. Customers would use the website to monitor the price of food grocery products and determine if some offer is ongoing at the time. It could also benefit vendors as it avails the market for new products by sending the same information to its email subscribers [4]. ShopSavvy gives users an easier situation since all prices are aggregated, and the user only needs to come online, click on the product they would wish to know

about the list of retailers and the price they are being offered at. This saves time and energy spent visiting each store to check on pricing. Because ShopSavvy is a website, the user can access it from any location with an internet connection, from home, work to even a train on his way home from work. A feasibility study assesses the practicability of an idea. The studies give 's system analysis. Therefore, this analysis will consequently result in the outcome of the feasibility studies, and these shall specify whether the system can proceed or not from this point to the next phase of system development's.

1.1 Technical Feasibility

The tools that will use for this system are:

Programming languages: Python | Html | CSS | JavaScript

Frameworks and libraries: Beautiful Soup | Nodejs | Reactjs Database: MongoDB | MySQL

Customers always seek out the lowest price and visit many stores to compare costs for the same item, but in this case, users may add all the products to the basket at once, compare the total cost of different e-commerce sites, and choose where to make their purchase [5]. Many websites give user reviews and ratings in addition to the price comparison option, along with product descriptions and specs, which enables customers to make well-informed purchases when buying online. The abstract emphasises how using a price comparison website can help consumers save money and make wiser purchase selections. Using our comparison option, users can also purchase products from immediate delivery platforms that are needed quickly, frequently in an hour or less [6].

II.LITERATURE REVIEW

In this section, we discuss the numerous research works taken up by the researchers. The problem identified, the algorithms used, performance criteria, and the solution are enumerated [7].

"Price Comparison Websites: A Review of...

Empirical Literature Investigation" by Teixeira and Wedel surveys scholarly papers on price comparison websites, discussing topics such as consumer behavior, website design, and what are these websites' effects on the retail industry [8].

"The Impact of Price Comparison Websites on Online Pricing Strategies" by Stephen Chen and Vincent Conitzer: Authors analyze how price comparison websites influence online pricing strategy of merchants and proffer suggestions on how they might make the best use of opportunities created by such websites [9].

"Do Price Comparison Websites Increase Competition?" by Martin Peitz and Patrick Rey. This paper examines whether price comparison websites benefit or, on the contrary, harm consumers and retailers, and under which circumstances they increase or decrease the level of competition among retailers [10].

"The Influence of Price Comparison Sites on Online Transactions: Empirical Insights from the Hotel Industry," by Daniel Heider, Jan Kraemer, and Oliver Hinz, endeavors to use the hotel industry as a base to ascertain how the use of online price comparison websites influences consumers' purchase decisions and hotel pricing strategies [11].

"Price Comparison Websites: A Study of Consumer Perceptions in the United States" by Ho Jung Kim, Emily Garbinsky, and Kelly Haws. The paper investigates the role of price comparison websites in consumers' decisions and the factors that boost the willingness of people to use them [12].

Analyzing the Price Comparison Websites: The paper looks into the advantages and disadvantages that price comparison websites present to consumers. The writers observe that price comparison websites enable consumers to save on time and money and increase their knowledge about features and prices of products [13].

"Price Comparison Websites: A Review of Research on Consumers' Attitudes and Behaviour" by Anne-Kathrin Kleine, Thorsten Teichert, and Sebastian Mai (2018), This paper summarizes some of the prior work in consumer behavior at price comparison sites. The authors mention that the consumers utilize such sites to capture the price heterogeneity but also, equally to compare the product features and availability of product reviews and ratings against the price paid [14].

"The Impact of Price Comparison Websites on Consumer Welfare" by Federico, Giulio, Howard Smith, and Michael Waterson

This literature review looks into the effect of price comparison websites on consumer welfare, including the effect on prices, quality, and product variety. They show that these consumer searches can reduce prices, raise quality, and increase product variety for these consumers [15]. They also indicate that use can be time-consuming and that information about quality will likely be quite varied, enabling possible biases and incorrectness.

Here is the proposal for the system for the price comparison website:

Data Aggregation: It should have the capability to aggregate data from different merchants or service providers, including descriptions and details of price or inventory levels of their goods and services, and details of shipping [16].

Search and filter: The system should support searching and filtering of products and services by keywords, categories, brand, price range, and any such parameter that might become relevant [17].

Compare: It should be able to compare prices and other aspects of products and services side by side to allow consumers to make informed decisions on what product or service would best suit their preferences [18].

Reviews and Ratings: Users should be able to read and provide reviews and ratings for goods and services on the system, which will provide them with more information and customer input.

Notifications and alerts should come from the system to the users when prices change, special offers become available, or products go on sale or run out of stock. — **Retailers' and Service Providers' Integration:** It should enable data integration from retailers and service providers of products and services, data from their stock, and pricing information, directly into the site, making the listings easier to both update and maintain.

Security and privacy: important in ensuring that private information, even payment information, is well protected to users while ensuring the system is compliant with all applicable laws and standards.

III. PROPOSED METHODOLOGY

A price comparison website (PCW) is a platform that enables users to compare prices of products or services offered by different vendors or retailers. The methodology for creating a price comparison website typically involves the following steps:

- **Source data collection:** Capture pricing data about goods and services from a variety of retailers and vendors. The data may be extracted manually from the websites of the vendors or with the help of web scraping technologies.
- **Data Normalization:** The data that is collected must be normalized so that the comparison can be presented as a fair one. Product qualities, their pricing, and descriptions will have to be standardized in order to normalize the information.

- **Data Processing:** The data must be processed in order to find matches and create a list of these for comparison. This may involve creating unique identities for each product or service, followed by removal of the duplicates.
- **Presentation:** This is supposed to be user-friendly and hence allows easy price comparison among the vendors. In presentation, it may involve making of tables, graphs, and charts that tell a brief tale of the data .
- **Analytics:** Some analytics software can be integrated into the website in order to trace how visitors are behaving, further improving their experience. You could use programmes such as Google Analytics only for the tracking of user traffic, clicks, and conversion rates from your site.
- **Maintenance:** The website must be updated frequently with the most recent details on vendor
- **Offerings and product prices.** This could also mean monitoring vendors' websites for new developments and making changes to the webpage accordingly.

The methodology for any price comparison website will, therefore, be the combination of data collection, normalization, processing, presentation, analytics, and maintenance that will come up with a platform enabling consumers to make informed purchasing decisions.

IV. RESULTS AND DISCUSSION

This section will provide a detailed explanation and discussion of the project's findings. The IPO (Input, Process, Output) Diagram, the Process Flow Diagram, the ShopSavvy Interface Design, the Sample of Search Results, and the Analysis of Survey Results are all covered in this part.

IV.1 IPO (Input, Process, Output) Diagram

The interactions between input and output elements, commonly referred to as "factors" and "responses," are shown in IPO diagrams to depict processes. It is highly helpful to describe a process as an activity that modifies inputs to produce related outputs. For a diagram of the ShopSavvy IPO, see the graphic below.

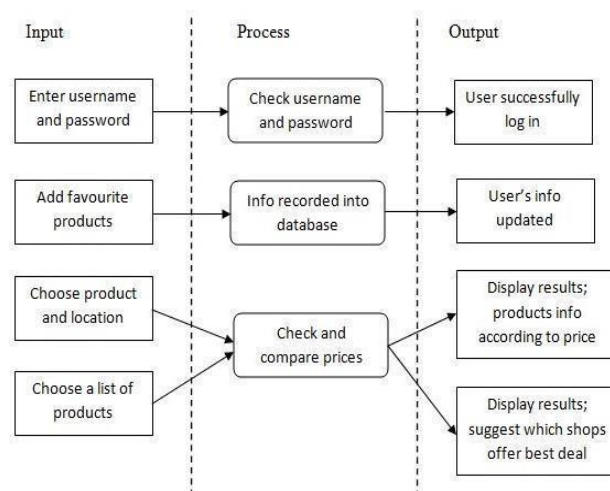


FIG 1- IPO Diagram

IV.2 PROCESS FLOW DIAGRAM

According to book 'Implementing Six Sigma and Lean – a Practical Guide to Tools and Techniques' written by Ron Basu, the definition of flow chart is a visual representation of all major steps in a process which helps people to

understand a process better by providing the actual flow or sequence of events in a process. Please refer figure below for ShopSavvy's flow diagram.

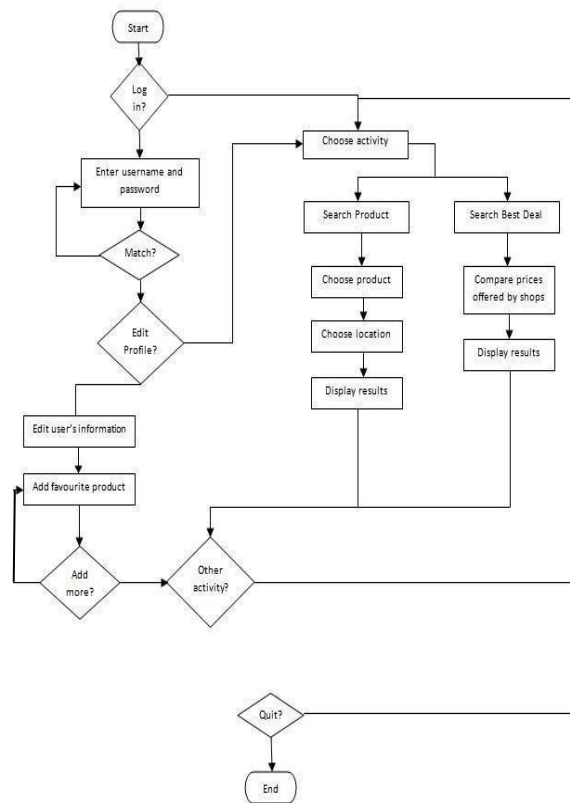
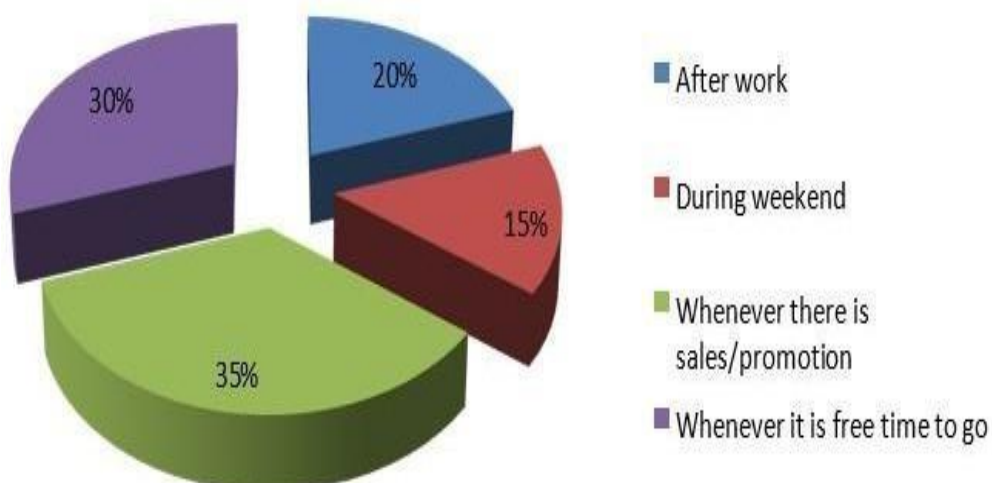


FIG 2- Process Flow Diagram

IV.3 INTERFACE DESIGN

IPO diagrams are used to represent processes by illustrating the interactions between input and output elements, often known as "factors" and "responses" respectively. The definition of a process as an activity that adjusts inputs to produce related outcomes is very helpful. See the illustration below for a representation of the ShopSavvy IPO.



"Factors that influence decision in making purchase"



Price Comparison														
Figures in \$			Vendor 1			Vendor 2			Vendor 3			Vendor 4		
Particulars	Description	Unit	Quantity	Price	Total Price	Quantity	Price	Total Price	Quantity	Price	Total Price	Quantity	Price	Total Price
Apple	Green & Red	Kg	2	10	20	2	11	22	2	9	18	2	10	20
Oranges	-	Kg	4	15	60	4	13	52	4	13	52	4	11	44
Banana	-	Dozen	3	14	42	3	17	51	3	12	36	3	13	39
Eggs	Organic	Dozen	5	5	25	5	7	35	5	4	20	5	6	30
Mutton	Only Goat	Kg	4	12	48	4	15	60	4	10	40	4	16	64
Yogurt	Mango flavor	Kg	1	6	6	1	5	5	1	5	5	1	5	5
Ice cream	Vanila, Choclote	Kg	0.5	8	4	0.5	7	3.5	0.5	6	3	0.5	9	4.5
Grand Total Cost			205			228.5			174			206.5		

V. CONCLUSION

Consumers can derive a lot of benefits from price comparison websites in the current e-commerce scenario. It provides a single platform to the consumers by which they can compare prices against a large number of firms, thereby making it easier for customers to get the best deals and make effective decisions. Some of the issues and constraints that are yet to be resolved include the involvement of traders, accessibility and accuracy of information, and inconsistencies in product description and price between a number of shops. In sum, the potential benefits of price comparison websites are

enormous, and their contribution to online purchasing development is significant. Due to constant innovation and the growth of the e-commerce market, price comparison websites will always play their role in exceeding information to consumers when making the best buying decisions, therefore driving industry innovation and growth.

VI. FUTURE SCOPE

In the futures, a price comparison website can be very promising with growing popularity in internet shopping. While an increased number of customers are shopping online, they are constantly comparing the prices and offers before purchasing any item. Price comparison websites help shoppers to save money and make wise purchases since this is where one gets the best offers and prices which different merchants have in store.

Websites offering price comparison facilities may provide services, such as leisure and travel in addition to the more conventional retail goods. For instance, a pricing comparison website might assist customers in finding the cheapest prices for travel, accommodation, and transport, along with concert and sporting event tickets

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