PERCEPTUAL MAPPING OF SELECTED E- COMMERCE SITES AND THEIR ATTRIBUTES: AN EMPIRICAL STUDY

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ABSTRACT:

The Internet has become an essential part of our daily life, and companies realize that the Internet can be a shopping avenue to reach existing and potential consumers of any business. With this consensus Online Shopping as a whole has rapidly grown. The biggest surprise is that groceries are one of the categories purchased online. Although online grocery shopping continues to grow. Because of COVID 19 there is positive impact on online grocery shopping apps, many people start online shopping.

This paper aims to discuss the consumer's perception towards the online grocery shopping apps and their various services in Navi Mumbai.

The paper is focused on the study and analysis of data collected from all customers of these apps who are regularly using these apps. Purpose is to know what are the influencing factors affect the profit and reputation of company. I collect the information from 100 customers who are living in Navi Mumbai.

Keywords: Correspondence analysis, Amazon, Flipkart, Big Basket, Grofers, D-Mart.

1. INTRODUCTION:

Online Grocery Market is a form of ecommerce that allows consumers to directly buy fresh food staffs or produce from a seller over the internet. An online grocery shop evokes the physical analogy of buying produce like it is done in a local market. The largest online retailing corporations are e-Bay and Amazon.com, both of which are based in the US. These giant online shops have with time been able to add to their sales the ability to sell fresh food and other home products through the internet

Online markets have been a thing that has come to stay with the society of today since most financial transactions can be attained online. Internet access has vastly grown across the world today and has given rise to interconnectivity even to the remotest areas in the world. This generally means it is possible to be at any location and reach any other location in the

world without stepping a foot out of your premises. This takes multi-tasking to another level since you can be in a meeting and visit a market located several kilometres away at the same time. This has made businesses to grow without spending as much as they would have if they had to build another branch of their business in another location. However this phenomenon has not caught in the Ghanaian business society, hence it has given rise to the topic of this project. An online grocery market is a website that will be used to sell and buy produce that can be commonly found in any local market. In our markets, sellers reach out to their customers who are present in the market at a particular time.

When a customer walks up to buy a bunch of bananas from a fruit seller, the customers is asked how much she wants to buy, she is served and then the customer walks away. The seller at this point has no record of the customer and this means no way of getting feedback from the customer which goes a long way to grow business. This website will be designed to increase profits by extending services and produce to a different customer base by means of online advertisement which cuts across many borders of our world. This website will hold a lot information that will increase the profits of business at a little cost. In reaching out to various customers over the internet, the concept is aimed at penetrating fractions of our Ghanaian population who are generally pre-occupied with activities which makes it impossible for them to step out of their daily activities to purchase their needs. It is also aimed to provide a source of income to many job seekers who may be interested in setting up their own business over the internet.

The Website will have these basic functions:

- ❖ Customer Information.
- ❖ Catalogue of items sold or available in the shop.
- ❖ Hold client shopping preference in a database.
- ❖ Interface for customer support or relations
- ❖ Delivery capabilities.

LITERATURE REVIEW –

As per, **Hairong le, cheng kuo, Maratha.g. Rusell** - "The Impact of Perceived Channel Utilities, Shopping Orientations, and Demographics on the Consumer's Online Buying Behaviour"(1999) consumer online buying behaviour is affected by demographics, channel knowledge, perceived channel utilities, and shopping orientations. the study found that

education, convenience orientation, experience orientation, channel knowledge, perceived distribution utility, and perceived accessibility are robust predictors of online buying status (frequent online buyer, occasional online buyer, or non-online buyer) of Internet users.

A survey by **Donthu and Garcia** (1999) indicates that online shoppers are more impulsive than others. According to (Alba et al. 1997) in their article - "The influence of online product recommendations on consumers online choices" emphasizes on the interactive nature of the Internet and web offers opportunities galore to increase the efficiency of Internet shopping behaviour by improving the availability of product information, enabling direct multi-attribute comparisons, and reducing buyer search costs .

According to **Harris Interactive Inc**. (2001) around 70 per cent of the US web users are seriously concerned about the safety of their personal information, transaction security, and misuse of private consumer data because of hacking, fraud, spam, and online scams frequently raising security concerns as well as scepticism and mistrust. The physical distance, lack of personal contact, and the anonymity of the Internet are also factors further increasing the consumers' anxiety and risk perceptions. The multidimensional character of online trust makes it a complicated issue and despite considerable research attention several online trust issues are still very little explored.

A study by **Grabner-Krauter and Kaluscha** (2003) analyses the complexity of concept. They identified trust constructs reflecting '... both institutional phenomena (system trust) and personal and interpersonal forms of trust (dispositional trust, trusting beliefs, trusting intentions and trust-related behaviours.'

OBJECTIVE OF THE STUDY

◆ To study the comparable apps of online Grocery Shopping and their attributes.

◆ To associations between of online Grocery Shopping and their attributes.

◆ To find multidimensional display of online Grocery Shopping and their attributes.

RESEARCH METHODOLOGY-

In this research both primary and secondary data will be used. In this research correspondence analysis method use. It is a popular method for analyzing categorical data

and develops perceptual maps. Perceptual maps help the organization to design its positioning strategies. Correspondence analysis is used to explore the relationship between attributes between brands and attributes in image and positioning studies. A structured questionnaire is designed with close-ended.

RESEARCH DESIGN-

Sample of 100 people was taken into study & their data was collected.

A chi-square test is a statistical test used in paper to find relation between E-Commerce sites with their attributes, and the purpose of this test is to determine if a difference between different E-Commerce sites. Therefore, a chi-square test is an excellent choice to help us better understand and interpret the relationship between our two E-Commerce sites and their relation with their attributes

DATA COLLECTION-

The data required for study are collected from primary and secondary sources.

PRIMARY DATA COLLECTION:

A survey conducted to get the primary information. It is the data which is collected directly that is for the first time in my project through Google survey sheet and which was taken from 100 people.

SECONDARY DATA COLLECTION:

Secondary data refers to the one which has already been collected by someone else. The secondary data was collected from internet, research papers, periodicals, and journal.

Sample technique: Random sampling

Statistical tool: Corresponding analysis, Perceptual mapping

Research instrument: structured questionnaire

Sample size: 100

Geographical area: Navi Mumbai

DATA ANALYSIS & INTERPRETATION-

Correspondence - Correspondence Table

Correspondence Table								
	Attributes							
Brands	Easy to order	quality of product	fair prices of products	Discounts and offers	Delivery on time	Fair delivery charges	Easy return policy	Active Margin
Amazon	85	63	54	56	76	51	72	457
Flipkart	80	51	58	71	56	53	65	434
Big basket	57	74	59	61	69	54	55	429
Grofers	65	72	58	60	65	58	59	437
D-mart	73	83	74	72	70	52	67	491
Active Margin	**360**	**343**	**303**	**320**	**336**	**268**	**318**	**2248**

The Correspondence Table displays the frequency for each category of each variable. The active margin shows the total of rows and column. Column shows attributes of online apps and rows shows Online Grocery apps. It has been shown that D-Mart has highest frequency i.e., 491 means high no. of people has responded for D-Mart. And it has shown that the attribute Good quality of product has the highest frequency

Correspondence - Row Profiles

Row Profiles								
	Attributes							
Brands	Easy to order	quality of product	fair prices of products	Discounts and offers	Delivery on time	Fair delivery charges	Easy return policy	Active Margin
Amazon	.186	.138	.118	.123	.166	.112	.158	1.000
flipkart	.184	.118	.134	.164	.129	.122	.150	1.000
big basket	.133	.172	.138	.142	.161	.126	.128	1.000

grofers	.149	.165	.133	.137	.149	.133	.135	1.000
D-mart	.149	.169	.151	.147	.143	.106	.136	1.000
Mass	.160	.153	.135	.142	.149	.119	.141	

The Row Profiles table displays the proportions of each column value across each row. The Mass values across the bottom refer to the column's proportion of the total sample size.

Correspondence - Column Profiles

<table>
<tr><th colspan="9">Column Profiles</th></tr>
<tr><th rowspan="3">Brands</th><th colspan="7">Attributes</th><th rowspan="3">Mass</th></tr>
<tr><th>Easy to order</th><th>quality of product</th><th>fair prices of products</th><th>Discounts and offers</th><th>Delivery on time</th><th>Fair delivery charges</th><th>Easy return policy</th></tr>
<tr></tr>
<tr><td>Amazon</td><td>.236</td><td>.184</td><td>.178</td><td>.175</td><td>.226</td><td>.190</td><td>.226</td><td>.203</td></tr>
<tr><td>flipkart</td><td>.222</td><td>.149</td><td>.191</td><td>.222</td><td>.167</td><td>.198</td><td>.204</td><td>.193</td></tr>
<tr><td>big basket</td><td>.158</td><td>.216</td><td>.195</td><td>.191</td><td>.205</td><td>.201</td><td>.173</td><td>.191</td></tr>
<tr><td>grofers</td><td>.181</td><td>.210</td><td>.191</td><td>.188</td><td>.193</td><td>.216</td><td>.186</td><td>.194</td></tr>
<tr><td>D-mart</td><td>.203</td><td>.242</td><td>.244</td><td>.225</td><td>.208</td><td>.194</td><td>.211</td><td>.218</td></tr>
<tr><td>Active Margin</td><td>1.000</td><td>1.000</td><td>1.000</td><td>1.000</td><td>1.000</td><td>1.000</td><td>1.000</td><td></td></tr>
</table>

The Column Profiles table displays the proportions of each row value down each column. The Mass values down the right-most column represent each row's proportion of the total sample size.

Correspondence - Summary

<table>
<tr><th colspan="9">Summary</th></tr>
<tr><th rowspan="3">Dimension</th><th rowspan="3">Singular Value</th><th rowspan="3">Inertia</th><th rowspan="3">Chi Square</th><th rowspan="3">Sig.</th><th colspan="2">Proportion of Inertia</th><th colspan="2">Confidence Singular Value</th></tr>
<tr><th rowspan="2">Account ed for</th><th rowspan="2">Cumulative</th><th rowspan="2">Standard Deviation</th><th>Correlation</th></tr>
<tr><th>2</th></tr>
</table>

1	.081	.007			.628	.628	.021	-.013
2	.053	.003			.263	.890	.021	
3	.032	.001			.096	.986		
4	.012	.000			.014	1.000		
Total		.011	23.700	.000ᵃ	1.000	1.000		

The Summary table displays a variety of useful information. First, we see that 3 dimensions were derived, but only two are interpretable (i.e., only two dimensions account for a supposedly meaningful proportion of the total inertia value). The Singular Value column displays the correlation between the two variables for each dimension. The Inertia column displays the inertia value for each dimension and the total inertia value. The total inertia value represents the amount of variance accounted for in the original correspondence table by the total model. Each dimension's inertia value, thus refers to the amount of that total variance which is accounted for by each dimension. So here total of inertia is .011, Chi Square is 23.7 and value of Sig is .479

Correspondence - Overview Row Points

		Score in Dimension			Contribution				
					Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
Brands	Mass	1	2	Inertia	1	2	1	2	Total
Amazon	.203	-.294	.376	.003	.216	.545	.480	.509	.988
flipkart	.193	-.395	-.319	.004	.370	.373	.694	.294	.988
big basket	.191	.330	.043	.002	.256	.007	.906	.010	.916
grofers	.194	.160	.030	.001	.062	.003	.548	.012	.560
D-mart	.218	.191	-.132	.001	.098	.072	.450	.138	.588
Active Total	1.000			.011	1.000	1.000			

The Overview Row Points table displays values which allow the research to evaluate how each row contributes to the dimensions and how each dimension contributes to the rows. The Mass (as mentioned above), is simply the proportion of each row to the total (2248). The Score in Dimension displays each row's score on dimension 1 and dimension 2. The Inertia column shows the amount of variance each row accounts for of the total inertia value. The contribution Of Point to Inertia of Dimension columns shows the role each row plays in each dimension; these are analogous to factor or component loadings. The contribution Of Dimension to Inertia of Point columns shows the role each dimension plays in each row -- these are not the inverse or opposite of the previous two columns because each dimension is composed of multiple points. The Total column represents the sum of each dimension's role in the row.
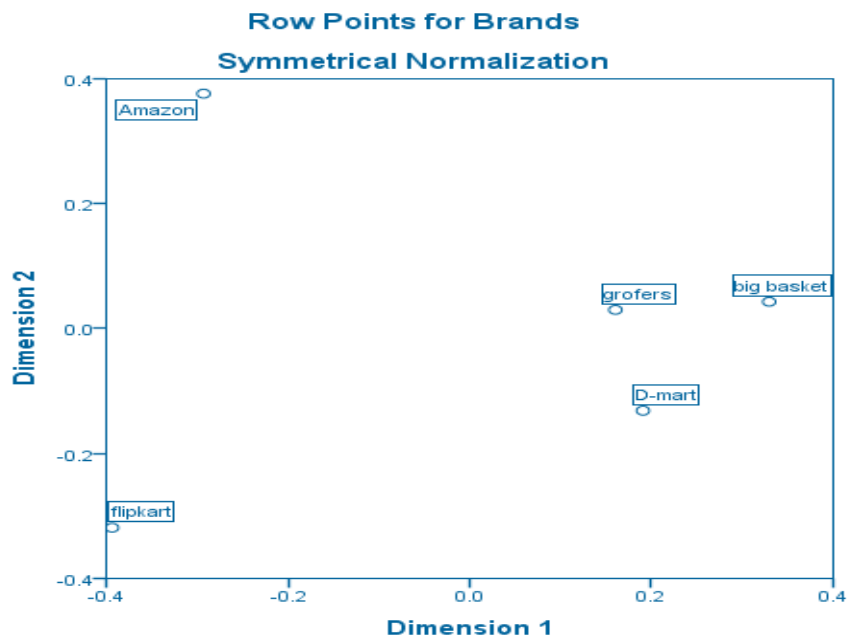
Correspondence - Overview Column Points

| Overview Column Points									
		Score in Dimension			Contribution				
					Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
Attributes	Mass	1	2	Inertia	1	2	1	2	Total
Easy to order	.160	-.456	.062	.003	.409	.012	.974	.012	.986
quality of prod	.153	.473	.099	.003	.420	.028	.952	.027	.979
fair prices of pr	.135	.169	-.232	.001	.047	.138	.370	.451	.821
Dis and offers	.142	-.037	-.397	.001	.002	.426	.013	.956	.969
Delivery on tim	.149	.079	.360	.001	.011	.367	.065	.878	.943
Fair delivery charge	.119	.054	-.039	.001	.004	.003	.035	.012	.046
Easy return policy	.141	-.247	.096	.001	.106	.025	.876	.086	.962
Active Total	1.000			.011	1.000	1.000			

The Overview Column Points table displays values which allow the research to evaluate how each column contributes to the dimensions and how each dimension contributes to the columns. The Mass (as mentioned above), is simply the proportion of each column to the total (2248). The Score in Dimension displays each column's score on dimension 1 and dimension 2.The Inertia column shows the amount of variance each column accounts for of the total inertia value. The contribution Of Point to Inertia of Dimension columns shows the role each column plays in each dimension; these are analogous to factor or component loadings. The contribution Of Dimension to Inertia of Point columns shows the role each dimension plays in each column -- these are not the inverse or opposite of the previous two columns because each dimension is composed of multiple points. The Total column represents the sum of each dimension's role in the column.

Correspondence - Row Points for Brands

Figure 1

Correspondence - Column Points for Attributes
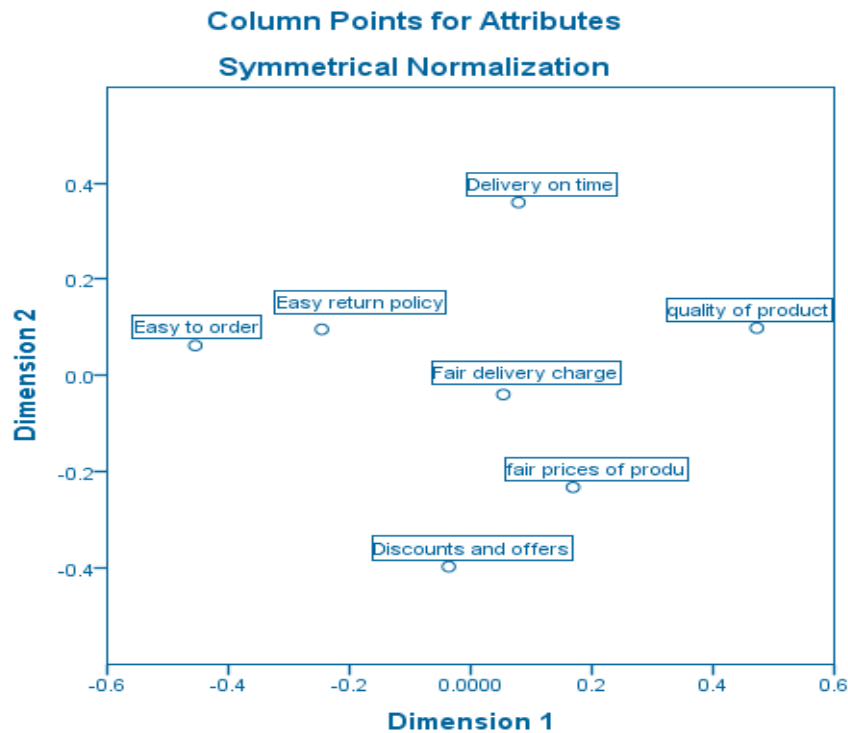
Correspondence - Row and Column Points

REPORTING OF RESULTS

➢ The data collected for analysis holds all assumptions and correspondence analysis

➢ The chi square value is 23.7 and sig value is 0.000<0.05. it means there is a relationship between brands and attributes.

➢ In the row and Coolum analysis. It has been observed that

- Amazon relates with the attributes are: Easy to return and easy to order.
- Flipchart relates to discounts and offers.
- DMart relates to fair price of product and fair delivery charges.
- Grofers and Big Basket relates to good quality of product and Delivery of product.

CONCLUSION

Due to technological innovation, the traditional mode of purchase has become inadequate for some individuals. People now prefer simpler modes for acquiring brands and reaching stores, and it can be stated that the Internet has fundamentally changed the

consumers' ideas on convenience, speed, price, and product and service information. As a result, vendors have found a new approach to create value for customers and build relationships with them.

This study intended to reveal the scale in which the following variables - security, information availability, shipping, quality, pricing and time - affect the dependent variable customer satisfaction. The model developed for this study was tested using the corresponding analysis. According to the research conducted, it can conclude that all companies are good in some factors and on some they have to work. Like it has been observed that Amazon good with the services like Easy to return and easy to order but they have to realize that the discounts and offers they provide are not matching to their competitors so they have to work on it.

FINDINGS & SUGGESTIONS-

1. For Amazon they have to give more discounts and offers to their customers to increase their sales
2. For flipchart many customers are not satisfied with quality of product which they are selling so, they have to focus on quality of their products.
3. For big basket and Grofers customer fill that their product ordering process is difficult and they also provide very less discounts and offers so they have to work on this for satisfaction of their consumers.
4. For D-Mart many customers are claiming that they are not deliver the product on time, so they have to focus on their transportation service

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