

STATUS OF E-CONSUMERS IN INDIA

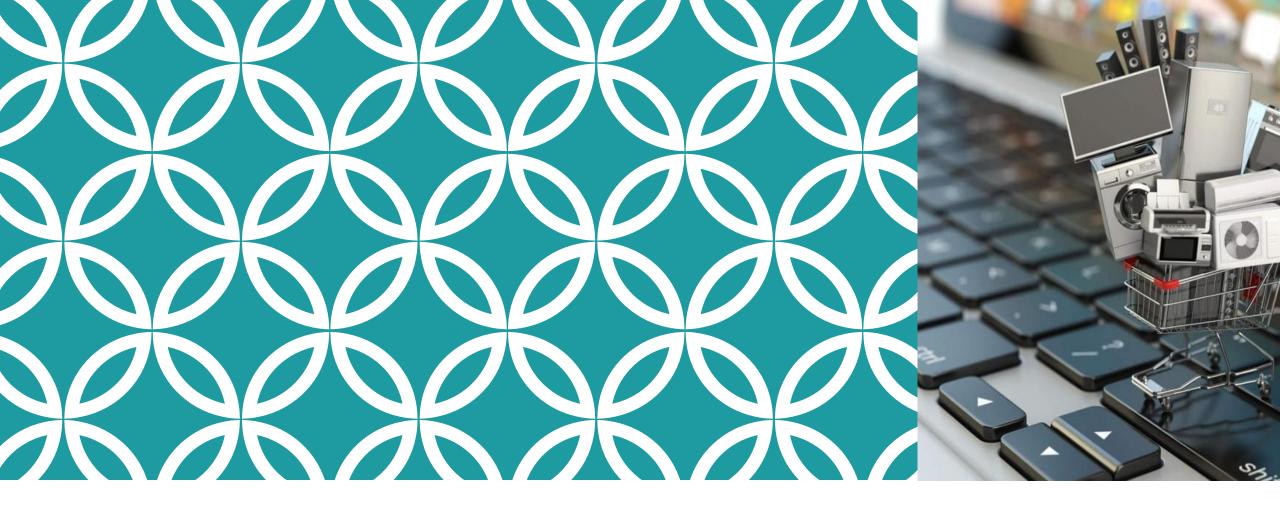
Consumer Welfare Index

Project Website available here.



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ABOUT THE PROJECT

BACKGROUND & PROJECT OVERVIEW

The COVID-19 pandemic has accelerated the growth of e-commerce and emerging trends. However, concerns related to counterfeit goods, product safety, predatory pricing, inadequate grievance redress, language barriers and data protection, among other things, severely impact consumer welfare and trust.

The growth of e-commerce needs to be attuned to consumer realities and maximise their welfare by centring their voices in the policymaking process. This is critical for the overall enhancement of consumer welfare.

In light of this, CUTS has undertaken a two-year-long project which analyses the <u>Status of E-Consumers in India</u> by calculating **Consumer Welfare** by using consumer surveys for two consecutive years viz. 2021 & 2022. The report from 2021 is available <u>here</u>. Detailed Report can be found <u>here</u>.

PROJECT OBJECTIVE

The project aims to evaluate the status of e-consumers by comparatively analysing the factor affecting consumer welfare based upon identified parameters within e-commerce in multi-brand retail trade in India.





RESEARCH DESIGN & METHODOLOGY

RESEARCH QUESTIONS, ENVISAGED OUTCOMES AND PROJECT APPROACH

RESEARCH QUESTIONS

- What is the estimated consumer gain or loss on different parameters of consumer welfare, emanating from e-commerce?
- What is the overall impact of e-commerce on consumer welfare?

ENVISAGED OUTCOMES

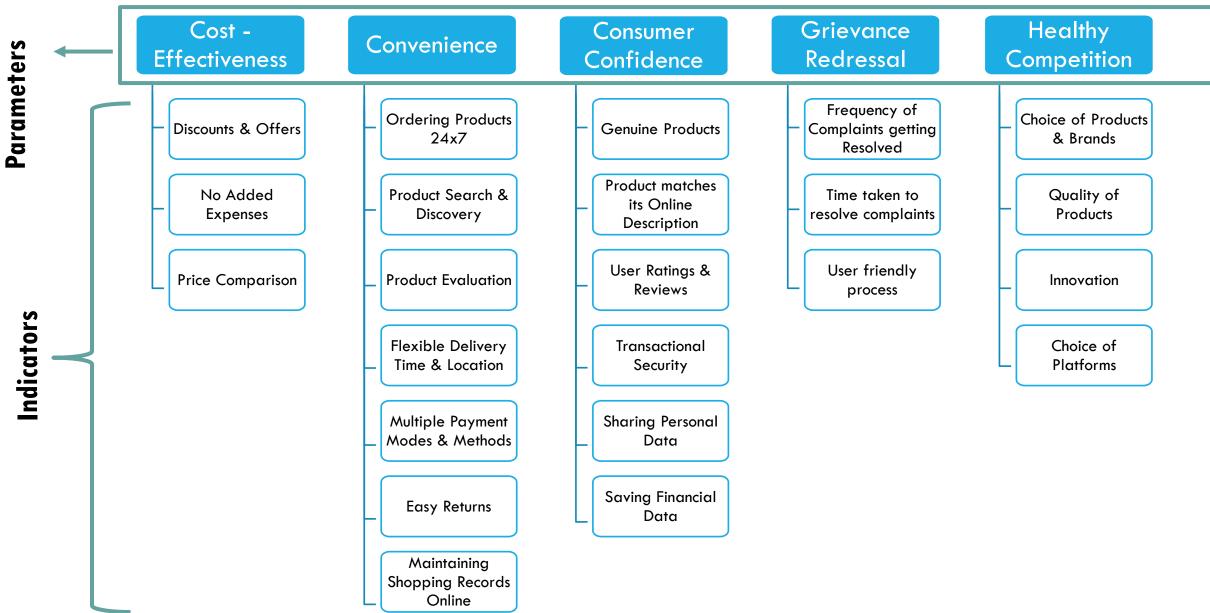
The findings of the project will help relevant stakeholders in developing a nuanced understanding of factors impacting consumer welfare for e-consumers.

PROJECT APPROACH

With e-commerce emerging mode of shopping, the concept of consumer welfare is evolving. Many non-price factors like quality, innovation and ease, among others impact consumer welfare. To assess the impact of these factors, we evaluate consumer welfare by taking a bottom-up approach which utilises primary research. It is first of its kind attempt to bring forward the consumer perspective on such factors.

Based on the literature review and discussions, 23 indicators were identified that contribute to overall consumer welfare. Identified indicators were categorised into five consumer-facing parameters. Further, to put findings in a

PARAMETERS & INDICATORS OF CONSUMER WELFARE



DESIGN OF SURVEY QUESTIONNAIRE

A total of 2246 consumers were asked to state their reasons for using e-commerce for the first time, the preferred mode of shopping, the perceived benefits received in terms of saving time and costs and safety. Respondent Profile is available in Annexure 1. Further, consumers were asked to rate their experience according to the scale provided on each of the 23 *Indicators (I)* of the 5 *Parameters (P)*:

- Consumers were also asked to state their *level of agreement (A)* about the Indicators positively impacting consumer welfare on a scale of 1 to 5 (1: Strongly Disagree, 2: Somewhat Disagree, 3: Neutral, 4: Somewhat Agree, 5: Strongly Agree).
- Consumers were also asked to rate the state the **level of importance (M)** they gave to each of the Indicators on a scale of 1 to 5. (1: Not at all Important, 2: Less Important, 3: Somewhat Important, 4: Important, 5: Very Important).

Further, consumers also stated the *level of improvement (K)* required for each of the Parameters on a scale of 1 to 5. (1: No Improvement Required to 5: Most Improvement Required).

They also stated the *total consumer welfare received (TCW)* in terms of benefits and satisfactions on a scale of 0 to 10. (0: No Consumer Welfare Received, 10: Maximum Consumer Welfare Received).

These responses are studied to understand the significance of each parameter in ensuring **Consumer Welfare (CW)** as perceived by the consumers themselves. Utilising them, several scores have been created. These have been explained in the subsequent slides. A table to better understand the nomenclature and methodology to calculate these scores have been presented in the Annexure 2.

SCORES FOR CONSUMER WELFARE: AGREEMENT & IMPORTANCE

A. AVERAGE AGREEMENT INDICATOR SCORE (AA_I) & AVERAGE AGREEMENT PARAMETER SCORE (AA_P)

Each respondent consumer was asked to rate their level of agreement about the indicators positively impacting consumer welfare for all the 23 indicators. Responses for each of the individual indicators were averaged out to arrive at the **Average Agreement Indicator Score (AA_I)**.

$$AA_{1_{11}} = (A_{1_{11}}^1 + A_{1_{11}}^2 + ... + A_{1_{11}}^n + ... + A_{1_{11}}^{2246})$$
 / Total Number of Respondents $AA_{1_{xy}} = Average$ Score of Agreement Responses by all Respondents for a Particular Indicator

Agreement Parameter Score for each respondent is represented as A_p^n . Further, Average Agreement Parameter Score (AA_p^n) is calculated by taking an average of all Average Agreement Indicator Scores (AA_p^n) for that particular Parameter.

$$AA_P_1 = (AA_I_{11} + AA_I_{12} + \ldots + AA_I_{1n}) / \text{Number of Indicators}$$

$$AA_P_x = \text{Average of Average Agreement Indicator Score of all the Indicators for the particular Parameter (P_x)}$$

$$OR$$

$$AA_P_1 = (A_P_1^{\ 1} + A_P_1^{\ 2} + \ldots + A_P_1^{\ n} + \ldots + A_P_1^{\ 2246}) / \text{Total Number of Respondents}$$

B. AVERAGE IMPORTANCE INDICATOR SCORE (AM_I) & AVERAGE IMPORTANCE PARAMETER SCORE (AM_P)

Similar to Agreement Scores, Importance Scores were also calculated.

$$AM_{11} = (A_{11}^{1} + A_{11}^{2} + ... + A_{11}^{n} + ... + A_{11}^{2246})$$
 / Total Number of Respondents $AM_{1xy} = Average$ Score of Importance Responses by all Respondents for a Particular Indicator

$$AM_P_1 = (AM_I_{11} + AM_I_{12} + \ldots + AM_I_{1n}) / \text{Number of Indicators}$$

$$AM_P_X = \text{Average of Average Importance Indicator Score of all the Indicators for the particular Parameter (P_X)}$$

Note:

- Indicator I_{xy} : x represents the parameter and y represents the indicator. [Example, I_{12} represents Discount and Offers under the Cost-Effectiveness]. In I_{11}^n : n represents the nth respondent.
- Similarly Parameter P_x : x represents the parameter. [Example: P_1 represents Cost-Effectiveness]. In P_1^n , n represents the n^{th} respondent.

SCORES FOR CONSUMER WELFARE: STATED V/S REVEALED

C. STATED CONSUMER WELFARE: TOTAL CONSUMER WELFARE (TCW) & AVERAGE STATED TOTAL CONSUMER WELFARE (ASTCW)

Consumers have rated the level of *Total Consumer Welfare (TCW)* received from e-commerce in terms of benefits and satisfactions. This is *Stated Consumer Welfare (CW)*. The *Average Stated Total Consumer Welfare (ASTCW)* is calculated by taking the average of all *TCW* scores.

ASTCW =
$$(TCW^1 + TCW^2 + \dots + TCW^{2246})$$
 / Total Number of Respondents

D. REVEALED CONSUMER WELFARE: ATTAINED CONSUMER WELFARE (ACW) & AVERAGE ATTAINED CONSUMER WELFARE (AACW)

While TCW has been stated by the consumers, the attained consumer welfare from their responses on the level of agreement and importance for each indicator is also calculated. This **Attained Consumer Welfare (ACW)** emanating from e-commerce **for each respondent** is arrived at by taking the summation of all Agreement Parameter Scores for each respondent. This is **Revealed Consumer Welfare (CW)**.

$$ACW^{n} = A_{1}^{n} + A_{2}^{n} + A_{2}^{n} + A_{3}^{n} + A_{4}^{n} + A_{5}^{n}$$

The Average Attained Consumer Welfare Score (AACW) is calculated by averaging the ACW of all respondents.

$$AACW = (ACW^1 + ACW^2 + ... + ACW^{2246}) / Total Number of Respondents$$

Note: Here, n in TCWⁿ represents TCW for the nth respondent. Similarly, n in ACWⁿ represents ACW for the nth respondent.

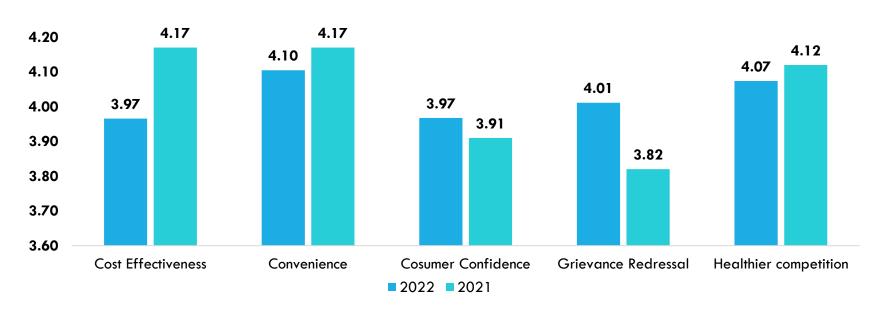


CONSUMER WELFARE FROM E-COMMERCE

PARAMETER AND INDICATOR LEVEL ANALYSIS

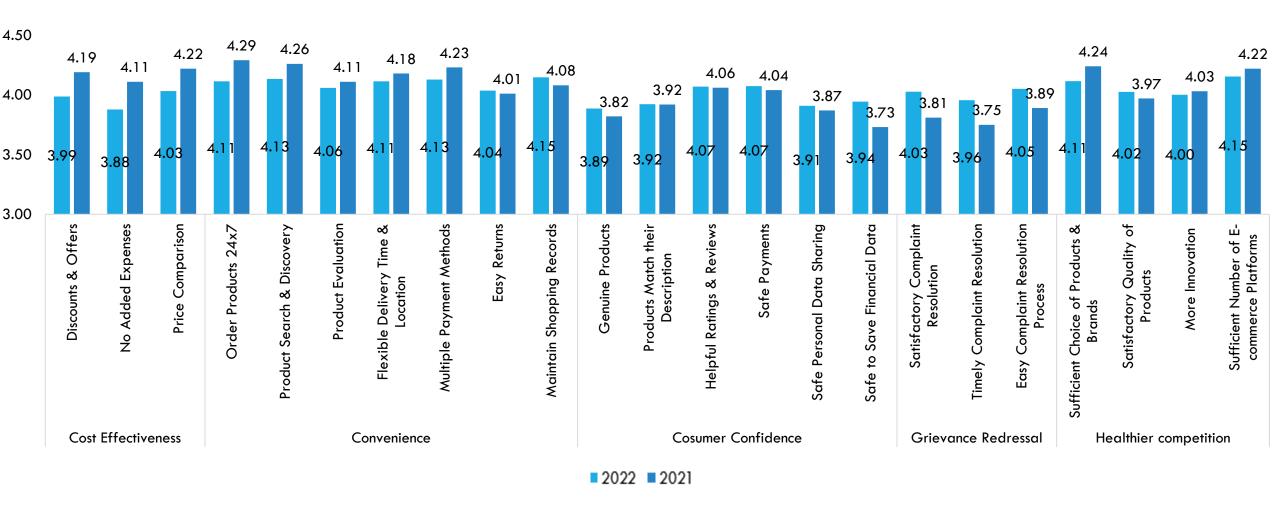
PARAMETER LEVEL AGREEMENT SCORES





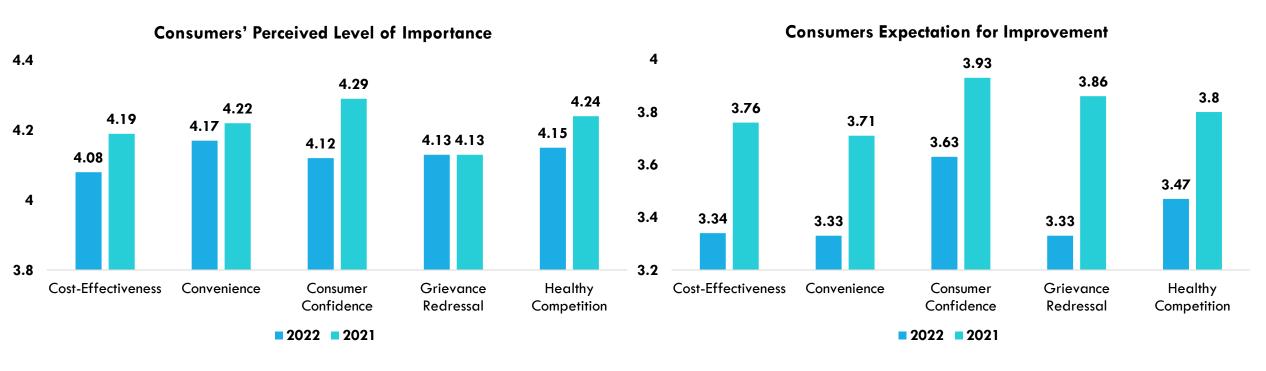
- As consumers have rated their level of agreement about the indicators positively impacting consumer welfare, the Average
 Agreement Parameter Scores and the Average Agreement Indicator Scores are utilised and compared to evaluate the consumer
 welfare emanating from e-commerce.
- For 2022, changes across all five parameters have been observed. Certain parameters have received better scores than others. Convenience has received the highest score at 4.10 and Cost-Effectiveness and Consumer Confidence have received the lowest scores at 3.97 each.
- When compared to 2021, in 2022, while Consumer Confidence and Grievance Redressal have improved, consumer welfare on other parameters has reduced. A deeper analysis for each of the parameters, including at the Indicator level is done in subsequent slides.

INDICATOR LEVEL AGREEMENT SCORES



• The above figure shows the **Average Agreement Indicator Scores** for all 23 indicators for both the years, viz, 2021 and 2022, in a comparative perspective. It is observed that while the ratings for some indicators have improved, for other indicators, there has been a decline. Various factors may have contributed to this and a detailed analysis is done in the report available **here**.

CONSUMERS PERCEIVED IMPORTANCE AND EXPECTATION FOR IMPROVEMENT



Importance: Apart from Grievance Redressal, the perceived level of importance for all Parameters in 2022 has reduced from 2021. However, in a comparative framework for parameters in 2022, consumers have provided almost equal level of importance for all parameters.

Improvement: The expectation for improvement has also significantly reduced for all Parameters. We have seen that apart from Consumer Confidence and Grievance Redressal, consumers have given lesser Agreement Scores on all Parameters. Consumers have experienced improvement in Consumer Confidence and Grievance Redressal and thus, their expectation for improvement has come down. For other Parameters, consumers may have lowered their expectation due to factors like low level of trust for change to happen.



CONSUMER WELFARE SCORECARD

INCLUDES ECONOMETRIC ANALYSIS

CONSUMER WELFARE SCORECARD: 2022

	1						
		Agreement	Importance				Importance
S. No.	Parameters & Indicators	Score	Score	S. No.	Parameters & Indicators	Agreement Score	Score
1	Cost-Effectiveness	3.97	4.08	2	Convenience	4.1	4.17
1.1	Discounts & Offers	3.99	4.14	2.1	Order Products 24x7	4.11	4.22
1.2	No Added Expenses	3.88	4.02	2.2	Product Search & Discovery	4.13	4.21
1.3	Price Comparison	4.03	4.08	2.3	Product Evaluation	4.06	4.1
	Expectation of Improvement	3.3	34	2.4	Flexible Delivery Time & Location	4.11	4.16
				2.5	Multiple Payment Methods	4.13	4.19
4	Grievance Redress	4.01	4.13	2.6	Easy Returns	4.04	4.19
4.1	Satisfactory Complaint Resolution	4.03	4.20	2.7	Maintain Shopping Records	4.15	4.15
4.2	Timely Complaint Resolution	3.96	4.13		Expectation of Improvement	3.33	}
4.3	Easy Complaint Resolution Process	4.05	4.07				
	Expectation of Improvement	3.3	3	3	Consumer Confidence	3.97	4.12
				3.1	Genuine Products	3.89	4.19
5	Healthy Competition	4.07	4.15	3.2	Products Match their Description	3.92	4.16
5.1	Sufficient Choice of Products & Brands	4.11	4.23	3.3	Helpful Ratings & Reviews	4.07	4.13
5.2	Satisfactory Quality of Products	4.02	4.17	3.4	Safe Payments	4.07	4.14
5.3	More Innovation	4.00	4.09	3.5	Safe Personal Data Sharing	3.91	4.08
5.4	Sufficient No. of E-commerce Platforms	4.15	4.12	3.6	Safe to Save Financial Data	3.94	4.03
	Expectation of Improvement	3.4	17		Expectation of Improvement	3.63	
	•				<u> </u>		

*Scores mentioned above are average respondent scores out of a maximum of 5.

Revealed CW Average Attained Consumer Welfare (AACW)

Distance to Frontier Score

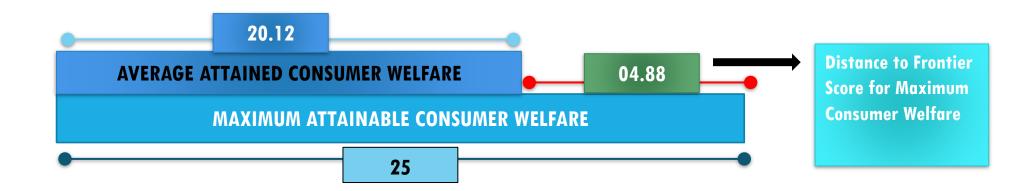
4.88

Maximum ACW possible through E-commerce

25

DISTANCE TO FRONTIER SCORE

Distance to Frontier Score = Maximum Attainable Consumer Welfare — Average Attained Consumer Welfare



The above figure indicates the Distance to Frontier Score for maximum Consumer Welfare through E-commerce, i.e. the distance of Consumer Welfare to the "frontier." The formula for the same has been explained above.

For the year 2022, the **Average Attained Consumer Welfare (AACW)** through all the five identified parameters is **20.12**. In percentage terms, **AACW** is **80.48 percent**.

For the year 2021, **AACW** was **20.19**. Thus, the **AACW** has been reduced by **0.07**. Consequently, the Distance to Frontier Score has reduced by **0.07**, which is **0.28 percent**.

STATED V/S REVEALED CONSUMER WELFARE

STATED CONSUMER WELFARE (ASTCW)

The Average Stated Total Consumer Welfare (ASTCW) is 7.3 out of 10. In percentage terms, ASTCW is 73 percent, whereas, the Average Revealed Consumer Welfare or the Average Attained Consumer Welfare (AACW) is 80.48 percent.

CORRELATION BETWEEN TCW & AACW

<u>Correlation</u> between stated *Total Consumer Welfare (TCW)* which is *Stated CW* and the *AACW)* which is the *Revealed CW* is **0.405**. There seems to be a huge difference between stated consumers welfare and revealed consumer welfare.

PAIRED T TEST BETWEEN TCW AND AACW

<u>Paired T-test</u> explains if there exists a significant difference between two variables of the same subject.

Using paired t-test, at 95% confidence level, the alternate hypothesis of mean difference being greater than 0 is accepted.

Thus, we conclude that there exists a statistically significant difference between Stated and Revealed Consumer Welfare.

. ttest acw1==tcw

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
acw1 tcw	2,246 2,246	8.048944 7.303206	.0282179	1.337303	7.993608 7.21769	8.10428 7.388721
diff	2,246	.7457384	.0412257	1.953767	.664894	.8265829

EXPLANATION

Possible explanations for this can include consumers understating the consumer welfare (benefits and satisfaction) actually received. They may also be considering other parameters while stating their consumer welfare. To further explore this, analysis by calculating Mean Difference for various groups on the basis of age, education, gender and location is done.

ESTIMATING CONSUMER WELFARE: REGRESSION ANALYSIS

To estimate the impact of each parameter on consumer welfare, multiple linear regression analysis is done. The dependent variable is *Total Consumer Welfare (TCW)*. Agreement Parameter Scores (A_P) of all Parameters $[A_P_1, A_P_2, A_P_3, A_P_4 \& A_P_5]$ are taken as independent variables. The model is presented below:

$$TCW = \beta_0 + \beta_1 * A_P_1 + \beta_2 * A_P_2 + \beta_3 * A_P_3 + \beta_4 * A_P_4 + \beta_5 * A_P_5 + u^{\land}$$

Regression Model Output is presented. Here, β_0 is the constant term and β_1 , β_2 , β_3 , β_4 and β_5 are coefficients of the independent variables.

Regression model output is presented. It shows that Cost-Effectiveness and Convenience are insignificant and thus, do not explain the Stated Consumer Welfare. Further, Consumer Confidence, Grievance Redressal and Healthier Competition are significant.

. reg SCW A P1 A P2 A P3 A P4 A P5, vce(robust)

Linear regression

Number of obs = 2246 F(5, 2240) = 63.73 Prob > F = 0.0000 R-squared = 0.1683 Root MSE = 1.8869

SCW	Coef.	Robust Std. Err.	t	P> t	[95% Conf.	Interval]
A_P1	.1260197	.0694178	1.82	0.070	0101103	.2621497
A_P2	.1222522	.130367	0.94	0.348	1334007	.377905
A P3	.3724912	.0946013	3.94	0.000	.1869758	.5580066
A_P4	.310254	.0771444	4.02	0.000	.1589719	.461536
A_P5	.3243863	.1104996	2.94	0.003	.107694	.5410786
_cons	2.257904	.304505	7.41	0.000	1.660763	2.855046

INTERPRETATION OF RESULTS FROM REGRESSION

Constant/Parameter	Parameter Coefficient	Interpretation					
Constant	2.25	If consumers don't benefit from any parameters, the total consumer welfare is 2.25.					
Consumer Confidence (A_P3)	0.372	Keeping all other parameters constant, Consumer Confidence in e-commerce significantly contributes towards the Stated Consumer Welfare and increases consumer welfare by 0.372 units.					
Grievance Redressal (A_P4)	0.31	Keeping all other parameters constant, Grievance Redressal in e-commerce significantly contributes towards the Stated Consumer Welfare and increases consumer welfare by 0.31 units.					
Healthier Competition (A_P5)	0.324	Keeping all other parameters constant, Healthier Competition significantly contributes towards the Stated Consumer Welfare and increases consumer welfare by 0.324 units.					

Since θ_5 is 0.372, improvement in **Consumer Confidence** will improve the Stated Consumer Welfare more as compared to improvement in other parameters. However, improvement in other significant parameters i.e. Consumer Confidence and Grievance Redressal also improves consumer welfare substantially.

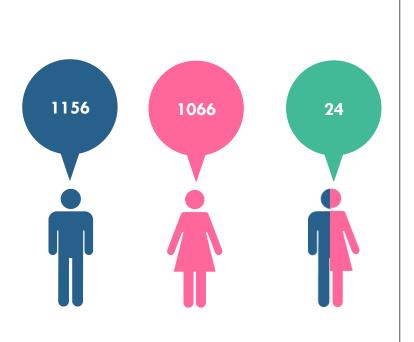


ANNEXURE 1: RESPONDENT PROFILE

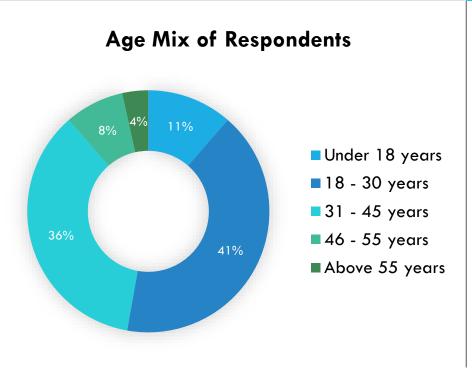
Annexure 1: Diverse consumers were reached out.

RESPONDENT PROFILE

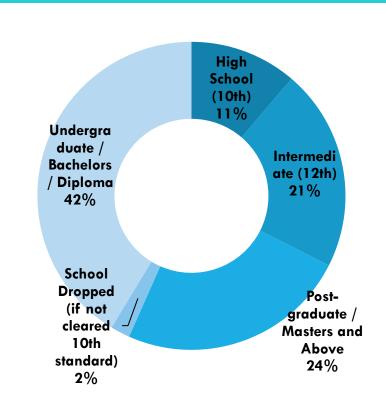
Almost equal number of male and female respondents were surveyed. Few transgender were also surveyed.



After data cleaning, analysis for a total of 2246 respondents was conducted. The respondents are from diverse age groups.



Respondents having diverse education levels were reached to get a wholistic perspective on consumer welfare.

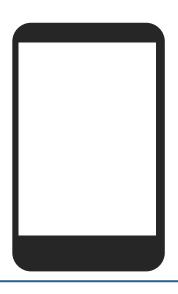


- A purposive random sampling methodology was adopted for identifying the survey respondents.
- Attempt to maintain neutral gender ratio was made.
- Conscious efforts were made to ensure a healthy mix of respondents from different age groups.
- Respondents from different educational levels were randomly selected. However, diversity in the same was also ensured.

Mode of Contacting Respondents

Geographic Diversity of Respondents





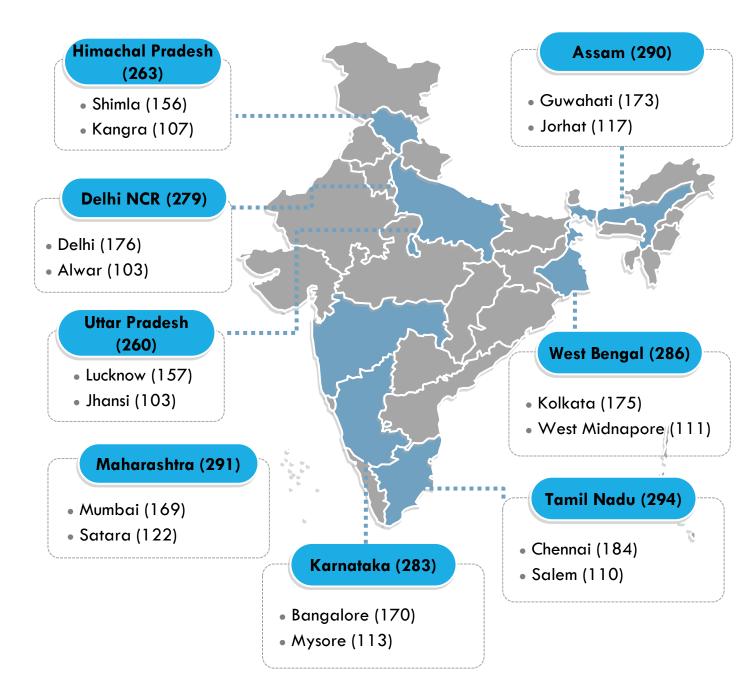
1106

Respondents were surveyed through onground in-person interviews.

1140

Respondents were surveyed through online questionnaires. This outreach method was adopted in light of the ongoing COVID-19 pandemic.

Note: A structured questionnaire was prepared in English, for conducting the surveys. The same was translated in regional languages as well (Hindi, Marathi, Bengali and Tamil), for convenient administration.





ANNEXURE 2:NOMENCLATURE AND METHODOLOGY SHEET

ANNEXURE 2

Variable Name	Name	Parameter Agreement Score	Parameter Importance Score	Indicator Agreemen t Score	Indicator Importance Score	Critical Indicator Score	Critical Parameter Score
Pl	Cost Effectiveness	A_P ₁	M_P ₁				CPS_P ₁ =Average(CIS_I ₁)
111	Discounts and Offers			A_I ₁₁	M_I ₁₁	$CIS_{11} = A_{11} * M_{11} / 25$	_
112	No Added Expenses			A_I ₁₂	M_I ₁₂	$CIS_{1_{12}} = A_{1_{12}} * M_{1_{12}} / 25$	
113	Price Comparisons Among Online Platform			A_I ₁₃	M_I ₁₃	$CIS_{1_{13}} = A_{1_{12}} * M_{1_{13}} / 25$	
P2	Convenience	A_P ₂	M_P_2				$CPS_P_2 = Average(CIS_I_2)$
121	Ordering Products 24*7			A_I ₂₁	M_I ₂₁	$CIS_{1_{21}} = A_{1_{21}} * M_{1_{21}} / 25$	
122	Search and Discovery Products			A_I ₂₂	M_I ₂₂	$CIS_{22} = A_{22} * M_{22} / 25$	
123	Evaluation of Products using Product Specifications			A_I ₂₃	M_I ₂₃	$CIS_{23} = A_{23} * M_{23} / 25$	
124	Options for Time and Location of Delivery			A_I ₂₄	M_I ₂₄	$CIS_{1_{24}} = A_{1_{24}} * M_{1_{24}} / 25$	
125	Option for Mode and Method of Payment			A_I ₂₅	M_I ₂₅	$CIS_{25} = A_{25} * M_{25} / 25$	
126	Easy Returns			A_I ₂₆	M_I ₂₆	$CIS_{26} = A_{26} * M_{26} / 25$	
127	Maintain Shopping Records Online			A_I ₂₇	M_I ₂₇	$CIS_{27} = A_{27}^* M_{27}/25$	
Р3	Consumer Confidence	A_P ₃	M_P ₃				$CPS_P_3 = Average(CIS_{1_3})$
131	Genuine Products			A_I ₃₁	M_I ₃₁	$CIS_{31} = A_{31} * M_{31} / 25$	
132	Products Delivered matches the Product Description			A_I ₃₂	M_I ₃₂	$CIS_{1_{32}} = A_{1_{32}} * M_{1_{32}} / 25$	
133	Informed Choice			A_I ₃₃	M_I ₃₃	$CIS_{1_{33}} = A_{1_{33}} * M_{1_{33}} / 25$	
134	Payment Security			A_I ₃₄	M_I ₃₄	$CIS_{1_{34}} = A_{1_{34}} * M_{1_{34}} / 25$	
135	Privacy			A_I ₃₅	M_I ₃₅	$CIS_{1_{35}} = A_{1_{35}} * M_{1_{35}} / 25$	
	Finance Data Security			A_I ₃₆	M_I ₃₆	$CIS_{1_{36}} = A_{1_{36}} * M_{1_{36}} / 25$	
	Grievance Redressal	A_P ₄	M_P ₄				$CPS_P_4 = Average(CIS_{4_1})$
	Action on Complaint			A_I ₄₁		$CIS_{I_{41}} = A_{I_{41}} * M_{I_{41}} / 25$	
142	Timely Resolution			A_I ₄₂	' <i>-</i> -	$CIS_{42} = A_{42} * M_{42} / 25$	
	User Friendly Resolution			A_I ₄₃	M_I ₄₃	$CIS_{43} = A_{43} * M_{43} / 25$	
	Healthier competition	A_P ₅	M_P ₅				$CPS_P_5 = Average(CIS_{1_5})$
	Choice of Products and Brands			A_I ₅₁	M_I ₅₁	$CIS_{1_{51}} = A_{1_{51}} * M_{1_{51}} / 25$	
	Competitive Product Quality			A_I ₅₂	M_I ₅₂	$CIS_{1_{52}} = A_{1_{52}} * M_{1_{52}} / 25$	
	Better Innovation			A_I ₅₃	M_I ₅₃	$CIS_{-1_{53}} = A_{-1_{53}} * M_{-1_{53}} / 25$	25
154	Choice of Platforms			A_I ₅₄	M_I ₅₄	$CIS_{154} = A_{154} * M_{154} / 25$	

PROJECT TEAM



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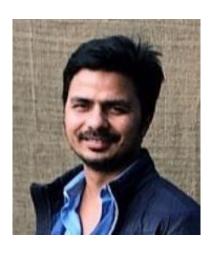
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CONSUMER UNITY & TRUST SOCIETY

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