



Perceived Price Premiums and Consumer Continuance Intention in Online Food Delivery: A Moderated Mediation Model for Vijayawada Consumers

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ABSTRACT :

Food delivery companies in India are facing tough competition as they grapple with their margins and consumer loyalty. Food delivery companies in India are seeing a competitive landscape as they tackle margins and consumer loyalty. Online food delivery platforms in India make their money from the "perceived price premiums" of their restaurants, which are higher on their menus than at the store, delivery fees, and platform fees, surcharges on peak hours and high delivery fees. This study aims to investigate the impact of consumers' perceptions of the price premium on their intention to use food delivery apps and under what conditions they do so. The design is based on expectation-confirmation theory, perceived value framework, and price-perception research and includes a perceived value as a mediator between perceived price premium and continuance intention, and price sensitivity as a moderator between the first part of the mediation. Surveyed respondents: 300 respondents using apps in Vijayawada are selected using a structured questionnaire and the data analysed in MS Excel using chi-square independence test, oneway ANOVA, multiple linear regression and regression based conditional process analysis. The relationship between perceived price premium and continuance intention is negative and significant ($B = 0.29, p < .001$), with an indirect effect via perceived value that is significant (indirect effect = 0.19, 95% CI [0.25, 0.13]). There is no significant direct relationship between perceived price premium and perceived value of the service ($B = 0.11, p = .24$). The conditional indirect effect is not significant at low price sensitivity (0.30), but is substantial at high price sensitivity (0.07); the overall effect, shown as an interaction with $B = 0.31$, is significant at $p < .001$. Income is associated with order frequency, ($9, N = 300$) = 50.36, $p < .001$, and perceived price premium varies significantly across income groups, $F(3, 296) = 6.81, p < .001$. The results indicate that delivery services have the capacity to protect perceived value and retain customer loyalty and should therefore develop value-based propositions, specific to the situation, for price sensitive and lower income customers.

Keywords: Submitted through to the 1. Perceived price premium, 2. Continuance intention, 3. Perceived value, 4. Price sensitivity, 5. Online food delivery, 6. Moderated mediation, 7. Vijayawada (Please, check the numbering of keywords based on the journal guidelines) Highlights • The study found that perceived value fully mediated perceived price premium on continuance intention. • The study found that perceived value mediates in the relationship between perceived price premium and continuance intention. • The study found that perceived value mediates in the relationship between perceived price premium and continuance intention with increasing levels of price sensitivity.

1. Introduction

From being an "unusual" occurrence to a 'normal' buying option in urban India, OFD has been discussed in the light of its advantages and disadvantages. The OFD has developed from being an "unusual" phenomenon to a 'normal' purchasing option for urban India, and has been debated on its advantages and disadvantages. While the Tier-1 cities have become popular destinations for on-demand food delivery systems, the Tier-2 cities like the principal trade, education and commerce center of Vijayawada located in Andhra Pradesh has turned out to be a significant market for such aggregators which have planted themselves into a large young, digitally oriented student, salaried and business class populace through constant dealification and plenty of choice.

This growth has been paralleled by an obvious trend in the way in which the final bill is put together. The cost of ordering on an app is usually the restaurant price (which can be less than restaurant price), delivery fee, platform/ convenience fee, package fee, taxes, and (during peak hours) a surge fee or a rain fee. They don't necessarily add all those up precisely but they develop a general perception that online shopping is more costly than it should be. This will be the perceived price premium in this paper.

As far as business is concerned then, the important thing is not whether the consumer placed an order once or not, but whether he places one again. The acquisition cost is expensive and as known it is the very economics of the food delivery industry; the ordering again of a customer. The usual manner in which a strategic choice is formulated in information systems and information systems based services (Bhattacharjee, 2001) is the concept of continuance intention, which is the probability that the consumer will continue using a service after his or her initial use.

The impact is therefore not likely to be simple. If consumers feel they are paying for, they can continue if they feel that the service is worth the price, according to Zeithaml (1988) who defines value as "a ratio of benefits to costs. The impact could be different among consumers. Consumers are more price sensitive, compare more, search more, and switch more (Lichtenstein, Ridgway and Netemeyer, 1993) and may be stingier about a premium. The conclusion that could be drawn is that there is a moderated mediation model, with the mediator (perceived value) conveying the role of a premium to the continuance intention, and the first link of the mediation model is moderated by the moderator (price sensitivity).

Existing studies have examined the drivers of adoption of a food delivery app, convenience, and usability and attitudes (e.g. Yeo, Goh and Rezaei, 2017; Ray, Dhir, Bala and Kaur, 2019). Few studies take up the price premium as the primary determinant, few put it to direct test, and few that study for which consumers it is most salient – let alone in a Tier 2 Indian city.

The following objective is what the study aims at:

To check how much Vijayawada users believe that food delivery online is more expensive.

Repeated measures design; within subjects to investigate the impact of the perceived price premium on the continuance intention;

Evaluate to determine if the effect is because of perceived value;

To test whether the impact of perceived price premium on perceived value is moderated by price sensitivity and then the hypothesized indirect effect of perceived price premium on continuance intention; and

Continue to use intention & utilization to see whether there are differences in perceptions of price based on demographic and usage factors (income, age, gender, frequency of order, system etc.).

The next step is to conduct a literature review and develop a hypothesis.

2.1 Continuance intention and expectation-confirmation

According to expectation-confirmation theory, if the actual performance is not less than the expected performance, then the satisfaction of the users of the product will increase, and this satisfaction will become the mediator in the process of determining the repurchase intention of the product (Oliver, 1980). Bhattacharjee (2001) extended this reasoning to information systems, arguing that the user intention to continue to use an IS depends on two factors: satisfaction and perceived usefulness, both of which are directly affected by the degree of disconfirmation of expectations of the initial experience with the IS. Inequality between the expected cost and actual charges, resulting in negative disconfirmation, will lead to a decrease in continuance intention for a food delivery app user who has the initial impression of convenient food at a relatively low cost.

2.2 Perceived price premium

Price research makes the distinction between objective price and perceived price. Consumers compare prices with the internal reference price, such as the menu price of the restaurant (Monroe, 1990), previous order or other food ordering app (Lichtenstein et al., 1993). When app price (or indeed total payable) is higher than that reference, there is a perceived premium by the buyer. In this study, perceived price premium refers to when the consumer feels that they will have to pay more for an order placed via a food delivery app compared to ordering food via other channels, such as ordering food directly or fees for delivery charges and surcharges. This is a perceptual construct and so we measure it by the pain of paying, not the rupee difference which is what we think is relevant for decision making.

2.3 was Perceived value as the mediating mechanism.

Zeithaml (1988) proposed that perceived value is "the consumer's overall evaluation of the utility of a product as determined by the perceptions of what he or she received and what he or she gave up. Dodds, Monroe and Grewal (1991) also determined that a higher price leads to lower perceived value because of price sacrifice, but higher perceived value because of perceived quality increase. In the unified theory of acceptance and use of technology, in its consumer extension, price value is added as a determinant of behavioural intention, and is defined as the consumer's cognitive trade off between the perceived benefits of the application and the monetary cost for the application.

Xu, 2012). The three streams mentioned above show that the perceived premium decreases the perceived value and the perceived value then influences the persistence intention of the consumer.

It is theoretically appealing to use value as a mediator because it provides an explanation for differences between the effects of the same premium: that it can be enough of a high for it to be accepted and the consumer continues ordering if there is enough convenience, speed and variety. Two hypotheses follow.

- H1: Perceived price premium has a negative influence on continuance intention (total effect).
- H2: Perceived price premium has a negative impact on perceived value.
- H3: Perceived value has a positive influence on continuance intention.
- H4: Mediating role of the perceived value between the perceived price premium and the continuance intention.

Price sensitivity was found as a moderating factor. Price sensitivity was identified as a moderating factor.

Price sensitivity refers to the willingness of consumers to consider the price in their buying decision (Lichtenstein et al., 1993). Consumers with high price sensitivity engage in greater product search, make more purchase comparisons and are more sensitive to prices' availability (Lichtenstein et al., 1993). Consumers with high price sensitivity know how the premium affects the price and value more of the premium than consumers with low price sensitivity, which may not consider the premium in the overall value judgement (price sensitivity). Consequently, moderation of the first stage of the mediation (premium to value) is to be expected.

H5: Price sensitivity moderates the effect of perceived price premium on perceived value, such that the negative effect of perceived price premium is higher at a high level of price sensitivity.

H6: Moderated mediation model: The indirect effect of price premium on continuance intention via perceived value is moderated by the price sensitivity and is stronger with high price sensitivity.

2.5 Demographic and usage differences

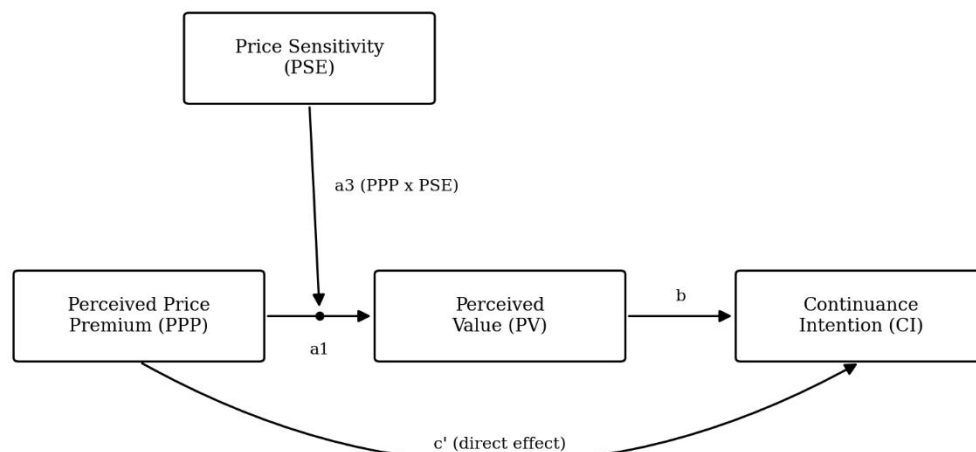
An individual with a lower income may be affected by the same delivery charge being a higher percentage of their income, hence their perception of price and use of the product is likely to be affected. The use and dependence on an app-based service and age may vary, as may be the choice of platform due to differences in promotions, restaurant selection, or user case. If a customer makes a choice to use the service again, he or she does so more often as he or she orders more. Because the relationships are predictive, there is opportunity to interact, these relationships will be tested in the subsequent additional hypotheses using chi square tests and a one way analysis of variance.

- S1: Place of residence is related to order frequency.
- S2: People prefer to use different platforms due to gender.
- S4: There is gender difference in continuance intention.
- S4: There are differences in income groups' perception of price premium.
- S5: There is a significant difference in the mean continuance intention among order-frequency groups.

2.6 Conceptual framework

The model proposed is conceptual model summarized in figure 1, where the independent variable is perceived price premium (PPP), the dependent variable is continuance intention (CI), the mediator that moderates the direct path of the independent variable to the dependent variable is perceived value (PV) and price sensitivity (PSE) is the moderator. This is indeed Stage One (moderated) mediation (Hayes, 2018).

Figure 1. Conceptual model



3. Research Methodology

3.1 Research design

Design: Quantitative, Cross-sectional, Explanatory study with questionnaire survey. The unit of analysis is the online food delivery app user consumer, which is referred to as "stud y".

3.2 Population, sampling and sample size

Targeted population included individuals aged 18 years and above, residing in Vijayawada and having placed at least one order in the past 3 months using a food delivery app. Since no sampling frame was available of the users of these apps, a non-probability sampling method was adopted, in which, respondents were picked from purposive screening and convenient sampling, by distributing questionnaires online in the social groups and in the commercial and educational areas of Vijayawada.

To a very large population. A sample size of approximately 385 respondents is indicated by Cochran (1977) formula at 95% confidence level, 5% sampling error with a maximum variability. The attained 300 would result in a sample error for proportions of about 5.7 percentage points. It is noted

that for few predictors ($m < 5$) a sample size of $n=300$ is greater than the rule of thumb for regression analysis (Green, 1991) $n=50+8m$. As described in Section 8, there are a number of drawbacks inherent in a non-probability sample.

3.3 Instrument and measures

Two sections of the questionnaire are created. Firstly Part A is about reporting and tracking the demographics and usage characteristics of users: gender, age group, income group, occupation, order frequency and platform used. The second part of the questionnaire (Part B) include 15 statements on a 5-point scale from (1=strongly disagree to 5= strongly agree, (Likert, 1932). Items and scales are borrowed from the literature pertaining to price-perception scales and perceived-value scales and continuance-intention scales (Dodds et al., 1991; Lichtenstein et al., 1993; Bhattacharjee, 2001). The result of the adaptation is used for food services. It is recommended that a small pilot test of users is carried out to ensure the wording and understanding of the questionnaire items. The items from the scale are displayed in the Appendix.

Table 1. Constructs and number of items

Construct	Items	Sample item
Perceived price premium (PPP)	4	Delivery, platform and packaging charges make my total bill noticeably higher.
Perceived value (PV)	4	The convenience I receive is worth the extra cost.
Price sensitivity (PSE)	3	I closely compare prices before placing an order.
Continuance intention (CI)	4	I intend to continue using food delivery apps in the coming months.

3.4 Data analysis procedure

Data analysis was performed in Microsoft Excel using formulas so that the exact data point corresponding to each number can be tracked back to the original data. Compound scores were obtained by averaging the items of each construct. Data analysis was performed in the following order: Descriptive statistics and reliability: frequencies, means, standard deviations, skewness and kurtosis, and Cronbach's (1951) alpha, with 0.70 as the lower limit of acceptability (Nunnally and Bernstein, 1994).

CHAPTER 4.8: Notes on data analysis may be summarised as follows. Chi-square tests of independence between the two pairs of categorical variables, with Cramr's (1946) V as effect size. Expected counts exceeded 5 in all cells.

Group differences in composite scores assessed using one-way ANOVA with eta squared as measure of effect size. Tests of homogeneity of variance based on a comparison of the ratio of the largest to the smallest group standard deviations (a ratio of below 2 is deemed acceptable (Field, 2018). Linear regression estimated by least squares via the LINEST function in Excel with predictors mean-centred Standardised coefficients, R , and adjusted R , the overall F test of the regression.

Moderated Mediation was tested via a regression-based conditional process model (Hayes, 2018). Model 2 regresses perceived value on the predictor, PSE and their interaction. Model 3 regresses CI on perceived value and predictor. The conditional effect of the predictor on perceived value at low (-1 SD), average, and high ($+1$ SD) price sensitivity was calculated re-centring the moderator at these values (Aiken and West, 1991). The conditional indirect effect can be calculated as the product of the conditional a -path and the b -path, whereas the index of moderated mediation is calculated as the product of the interaction term and the b -path.

All statistics were significant at the 5% level. The bootstrapping which is suggested for indirect effects in Excel is not possible (Preacher, Rucker and Hayes, 2007). The confidence intervals for the indirect effects therefore, have used the normal-theory standard error of a product (Sobel, 1982) and this is mentioned again in section 8.

3.5 Ethical considerations

Participation was voluntary and anonymous. Participants were briefed about the general purpose of the research and gave their consent prior to completing the questionnaire, no identifying information was recorded and results are presented on an aggregated basis.

4. Results

4.1 Sample profile

Table 2 gives details of 300 respondents. A majority were male (53.7%) while 46.3% were female. A majority of respondents were between 18 and 34 years of age (69.0%), with the largest income group being between 40000 and 70000 rupees (35.0%).

The occupational group comprising of salaried employees was the largest (38.3%) followed by students (28.0%).

Swiggy was the most preferred platform (47.7%) followed by Zomato (38.3%). Not surprisingly, many of the respondents ordered frequently or very

frequently (45.0%) combined.

Table 2. Respondents' Characteristics (N = 300)

Variable	Category	n	%
Gender	Male	161	53.7
	Female	139	46.3
Age	18–24 years	102	34.0
	25–34 years	105	35.0
	35–44 years	66	22.0
	45 years and above	27	9.0
Monthly income (INR)	Below 20,000	55	18.3
	20,000–40,000	97	32.3
	40,001–70,000	105	35.0
	Above 70,000	43	14.3
Occupation	Student	84	28.0
	Salaried	115	38.3
	Self-employed	64	21.3
	Other	37	12.3
Order frequency	Rare (under 2 a month)	60	20.0
	Occasional (2–4)	105	35.0
	Frequent (5–8)	90	30.0
	Very frequent (9 or more)	45	15.0
Preferred platform	Swiggy	143	47.7
	Zomato	115	38.3
	Other apps	42	14.0

4.2 Reliability, descriptive statistics and correlations All 4 scales had an acceptable reliability (Cronbach's Alpha ranging from .81 to .87, which is above the minimum of .70; see Table 3). Based on the means of the composite scores, then the respondents have an average rating for price premium (3.60), an average rating of value (3.10), an average rating of price sensitivity (3.50), and an average rating of continuance intention (3.75). Skewness and kurtosis were approximately 1, indicating that the data were close to normally distributed and appropriate for the use of parametric tests.

Table 3. Reliability and descriptive statistics

Construct	Items	α	Mean	SD	Skew
Perceived price premium	4	.864	3.60	0.81	–0.26
Perceived value	4	.865	3.10	0.83	0.00
Price sensitivity	3	.812	3.50	0.82	–0.23
Continuance intention	4	.861	3.75	0.80	–0.49

Source: Excel workbook, Descriptives sheet. Example simulated data.

The correlations are shown in Table 4. Perceived price premium was negatively correlated with perceived value ($r = .40$), and negatively correlated with continuance intention ($r = .29$), with perceived value being strongly and positively correlated with continuance intention ($r = .54$). These results are in accordance with the proposed mediation. The correlation between price sensitivity and the other variables was weak (at $p < .05$ with $N = 300$, $|r| < .113$) and there was not a correlation high enough to be concerned about multicollinearity.

Table 4. Pearson correlations among composite scores

	PPP	PV	PSE	CI
PPP	1			
PV	-.398	1		
PSE	-.043	-.118	1	
CI	-.290	.541	-.065	1

*Note:PPP = perceived price premium; PV = perceived value; PSE = price sensitivity; CI = continuance intention. $|r| > .113$ is significant at $p < .05$.

4.3 Chi-square tests of independence (S1, S2)

Income and order frequency. A chi-square test of independence revealed a significant association, $(9, N = 300) = 50.36, p < .001$, Cramr's $V = .24$, small-to-moderate effect, between monthly income group and order frequency. All expected cell counts were above 5 (minimum = 6.45). Order frequency was more common among the highest income group, with 41.9% of respondents in this group (18 out of 43 respondents earning above 70 000 rupees) ordering very frequently (compared with a cell expected of 6.45), while respondents earning below 20 000 rupees were under-represented among regular and occasional users but over-represented among rare users (20 observed, compared with 11.0 expected). S1 is supported.

Table 5. Income group by order frequency (observed counts)

Income (INR)	Rare	Occasional	Frequent	Very frequent	Total
Below 20,000	20	23	10	2	55
20,000–40,000	24	36	28	9	97
40,001–70,000	13	37	39	16	105
Above 70,000	3	9	13	18	43
Total	60	105	90	45	300

$(9) = 50.36, p < .001$, Cramr's $V = .24$. Source: Excel workbook, Chi_Square sheet.

Gender and platform preferred. The correlation of gender and preferred platform was not significant $(2, N = 300) = 5.20, p = .074, V = .13$. Slightly more women than men preferred Swiggy (54.7% compared to 41.6%) and men (42.2% compared to 33.8%) than women, but the associations could not be distinguished from chance at the 5% level. S2 is not recommended!

4.4 One-way ANOVA (S3, S4, S5)

All3 continuation intentions by age group. A negative correlation was found between the all3 continuance intention (mean = 3.84 for 18 to 24 years of age, and 3.56 for 45 years of age and above), however it was not statistically significant, $F(3, 296) = 1.64, p = .181, \eta^2 = .016$. Please note that S3 is not supported.

Perceived price premium by income group was also significantly different by income group [$F(3, 296) = 6.81, p < .001, \eta^2 = .065$ (medium)]. Means were found to decline in a linear fashion with an increase in income values, ranging from 3.93 to 3.31 at the lowest and highest income bands, respectively. S4 is supported.

Frequency of use intention. There was also a significant interaction effect by order frequency with continuous usage intention, $F(3, 296) = 32.46, p < .001, \eta^2 = .248$ (large), with the mean continuous usage intention score being raised from 3.13 in the rare group to 4.42 in the very frequent group. S5 is tested. The group standard deviations were close enough so that the equal-variance assumption is reasonable (ratio between the largest and smallest standard deviation was 1.63 for all 3 tests). If a pairwise comparison is desired, and the omnibus test is not reporting which pairs differ, a Tukey HSD (or Bonferroni t test) can be done in a statistics package..

Table 6. One-way ANOVA results

Comparison	Group means	df	F	p	η^2	Result
CI by age group	3.84, 3.79, 3.62, 3.56	3, 296	1.64	.181	.016	n.s.
PPP by income group	3.93, 3.69, 3.45, 3.31	3, 296	6.81	< .001	.065	Sig.
CI by order frequency	3.13, 3.66, 3.93, 4.42	3, 296	32.46	< .001	.248	Sig.

Note: Group means ordered as categories in the excel work book (less to more age, income and frequency). N.s. = not significant. Source: ANOVA sheet.

4.5 Linear regression

A simple regression of continuance intention on perceived price premium (Model 1) yielded a significant negative total effect, $B = 0.287$, $SE = 0.055$, $t = 5.22$, $p < .001$, $\beta = .29$, with $R = .084$, $F(1, 298) = 27.29$, $p < .001$. One point higher in perceived premium resulted in a 0.29-point drop in continuance intention. H1 is supported.

In multiple regression (Model 4), the intention to continue was regressed on perceived price premium, the two measures of Price sensitivity and the perceived value. The model was significant ($F(3, 296) = 42.11$, $p < .001$) and explained 29.9% of the variance (adjusted $R = .292$). Given that the effect of the premium is to be carried by value, the other two significant factors – perceived price premium ($B = 0.088$, $p = .096$) and price sensitivity ($B = 0.009$, $p = .846$) – were not significant as expected when the perceived value factor was added. H3 is supported. Table

7. Regression of continuance intention (outcome)

Predictor	B	SE	t	p	β	Model
Model 1: PPP	-0.287	0.055	-5.22	< .001	-.290	$R^2 = .084$
Model 4: PPP	-0.088	0.053	-1.67	.096	-.089	$R^2 = .299$
PSE	-0.009	0.048	-0.19	.846	-.010	Adj. $R^2 = .292$
PV	0.483	0.051	9.40	< .001	.504	$F(3, 296) = 42.11$
Intercept (Model 4)	2.250	0.164	13.70	< .001	—	

Note: Means were centred for the predictors (except PV was entered un-centred in Model 4). Model 1 $n = 300$, $F(1, 298) = 27.29$. Source: Regression sheet.

4.6 Moderated mediation (H2, H4, H5, H6)

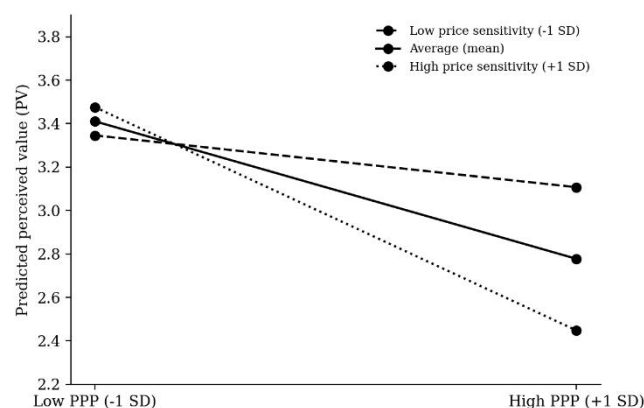
The component regressions are shown in Table 8. The results of Model 2 showed that perceived price premium was significantly negatively related to perceived value, $B = 0.392$, $SE = 0.053$, $p < .001$ (thus supporting H2); and the interaction of PPP and PSE was significant negatively related to perceived value, $B = 0.299$, $SE = 0.066$, $p < .001$ (thus supporting H5). The model explained a 23.1% of the variance in perceived value. The direct effect of perceived value on continuance intention was significant and positive ($b = 0.485$, $SE = 0.051$, $p < .001$) and the direct effect of perceived price premium was not significant ($c = 0.087$, $SE = 0.053$, $p = .097$) in Model 3. The model accounted for 29.9% of the variance in continuance intention. Table 8. Component regressions for the model of moderated mediation

Outcome and predictor	B	SE	t	p	β
Model 2 outcome: PV ($R^2 = .231$)					
PPP (a1)	-0.392	0.053	-7.39	< .001	-.379
PSE	-0.162	0.052	-3.09	.002	-.159
PPP $\times$ PSE (a3)	-0.299	0.066	-4.56	< .001	-.235
Model 3 outcome: CI ($R^2 = .299$)					
PV (b)	0.485	0.051	9.55	< .001	.506
PPP (direct effect c')	-0.087	0.053	-1.66	.097	-.088

Note: PPP and PSE are mean-centred. Source: Mod_Mediation sheet.

Figure 2 depicts the interaction. When price sensitivity is low, a bigger premium decreases perceived value only a little (PV predicted value drops from 3.35 when the premium is low to 3.11 when premium is high, low to high rating) but at high price sensitivity the fall is very steep (3.48 low premium – 2.45 high premium). The conditional effect of PPP on PV (the a-path) was 0.148 ($p = .064$) at low price sensitivity, 0.392 ($p < .001$) at average, and 0.637 ($p < .001$) at high price sensitivity.

Figure 2. Perceived Value as a Function of Perceived Price Premium and Price Sensitivity



The conditional indirect effects are shown in Table 9. Perceived price premium had negative significant effect on continuance intention through perceived value at average price sensitivity (0.190, 95% CI [0.254, 0.126]) and at high price sensitivity (0.309, 95% CI [0.401, 0.216]) while at low price sensitivity was not significant (0.072, 95% CI [0.149, 0.005]). The index of moderated mediation was 0.145 (SE= 0.035, 95% CI [0.214, 0.076]) indicating the indirect effect was significantly moderated by price sensitivity. As the direct effect is nonsignificant whereas the indirect effect is, this pattern shows that it is consistent with full mediation at the average price sensitivity. The school is supported by H4 and H6..

Table 9. Conditional indirect effects of PPP on CI through PV

Price sensitivity level	a-path	b-path	Indirect	95% CI	p
Low (mean – 1 SD)	–0.148	0.485	–0.072	[–0.149, 0.005]	.068
Average (mean)	–0.392	0.485	–0.190	[–0.254, –0.126]	< .001
High (mean + 1 SD)	–0.637	0.485	–0.309	[–0.401, –0.216]	< .001
Index of moderated mediation			–0.145	[–0.214, –0.076]	< .001

Note: Confidence intervals are based on the normal-theory (Sobel-type) standard error, not bootstrapping. Source: Mod_Mediation sheet.

4.7 Summary of hypothesis tests

Table 10. Summary of hypotheses

No.	Hypothesis	Test	Result
H1	PPP reduces CI (total effect)	Regression	Supported
H2	PPP reduces PV	Regression	Supported
H3	PV increases CI	Regression	Supported
H4	PV mediates PPP → CI	Conditional process	Supported
H5	PSE moderates PPP → PV (stronger when high)	Regression	Supported
H6	Indirect effect is conditional on PSE	Conditional process	Supported
S1	Income associated with order frequency	Chi-square	Supported
S2	Gender associated with preferred platform	Chi-square	Not supported
S3	CI differs by age group	ANOVA	Not supported
S4	PPP differs by income group	ANOVA	Supported
S5	CI differs by order frequency	ANOVA	Supported

5. Discussion

The findings in this study are in line with a value-based explanation of the effect of price premiums on the retention of customers in online food delivery services. As per expectation confirmation paradigm (Oliver, 1980; Bhattacharjee, 2001), the perceived price premium had a negative effect on continuance intention in the simple model, as expected. That is, customers were not trying to stop using the apps when they had to pay more, but they did so as much as paying more decreased the value of the app. This is in line with conceptualization of value as what one gains and what one gives up (Zeithaml, 1988, Dodds et al., 1991) as well as models of technology adoption that incorporate a price value (Venkatesh et al., 2012).

The moderation result is more subtle. As for its impact on continuance intention, price sensitivity had a non-linear relationship: the negative relationship between the premium and perceived value was exacerbated. The indirect effect was virtually insignificant and statistically insignificant for the lowly price sensitive consumers, but the indirect effect for the highly price sensitive consumers was approximately four times as large. This confirms previous research showing that price sensitive consumers look at the price more often (Lichtenstein et al., 1993) and shows that the mechanism (and not necessarily the average value of the effect) varies across types of consumers.

These additional analyses paint the same picture of differences based on income. The lower income may have seen higher premiums, and lower frequency of use, while the highest income may have been overrepresented among very frequent users. It is not surprising that intention to continue was much higher among frequent users since frequent use and intention to continue are basically measures of a similar attitude, and this cross sectional design does not allow for establishing causality. There were no significant differences between age or gender in this sample.

5.1 Theoretical implications

It is the difference in perceived price and not the difference in price itself that is specific to a platform in which the final bill is the total of several fees, explaining the discontinuous nature of a transaction.

The impact of the premium is mediated through perceived value, and a modified expectation-confirmation model is possible which considers price as one aspect of the experience and not the experience itself.

This indicates this is a conditional mechanism – meaning the first stage moderation of price-sensitivity means that the value route has a lot more impact on some consumers than others.

5.2 Managerial implications

Value above price. Platforms should not fall into the trap of believing it's just about price as the incremental premium is a function of value: delivery performance, range, accuracy and scope of restaurants. Other levers besides fees.

Be upfront with your pricing. Give a bill upfront, in clear detail, that the customer will understand from the start of the conversation that they paid a lot of money for it – the moment of disconfirmation.

Tackle the most price-sensitive customers first. The very consumers who will reap the greatest benefit from value reduction by a surcharge are those who are price sensitive. For these consumers, the membership schemes, free delivery level, off-peak pricing, and bundles will work better than ad hoc discounts.

Be aware of the income imbalance. Premiums appear to be high, and quantities ordered are less for those who have less income. The needs of this group may be able to be addressed through smaller basket sizes, pickup and local restaurant partnerships, without cannibalizing margins from higher frequency, higher income consumers.

Eating establishments. Eating places that increase app menu costs to recoup commissions ought to recognise that the markup is bolstered into platform costs within the consumer's psyche and can add additional to the perceived premium.

6. Limitations and Future Research

There is of course a couple of things that could be improved. Firstly, this is a cross sectional self-reporting design so there is no ability to infer causality; common method variance is a possibility, as all constructs were included in the one survey, Harman's single factor test should be used to determine if it is present. Secondly, the nonprobability sampling design does not allow generalizing conclusions to those not sampled and to the region, beyond the scope of Vijayawada (sampled region). Thirdly, the intended (perceived) items and the observed items (behaviour) were both collected by the survey, and there will be a stronger association if order record data is used. Fourthly, the composite scores are based on the assumption that all the items are equally weighted and that they are validly measured without any errors, and the measurement of validity is directly assessed with the use of confirmatory factor analysis and structural equation modelling, particularly the convergent and discriminant validity. A normal approximation to the confidence interval, as indicated here, is not possible in Excel since the program lacks a bootstrap feature, although a second run of the analysis with a bootstrapping process could be performed (e.g. The PROCESS macro) would be recommended prior to publishing. Ultimately, there were other moderators that might have been added to the model, such as membership and trust, delivery time and advertisement exposure.

The model could be simplified to be used for other cities in tier 2 and tier 1, adopted longitudinally to track actual repeat ordering, compared platforms, and be tested with different boundary conditions such as household size and subscription membership.

7. Conclusion

The study revealed a model of moderated mediation, in which the perceived price premium decreased the continuance intention through perceived value and this was stronger for more price sensitive consumers. The analysis is simple, and all conducted in Excel, which correspond to this model and points out possible differences in the perception of prices according to income level.

And the frequency of use. So the platforms take away is that it is not just about the price but whether it's worth paying, with the most vulnerable to fickle consumption decisions being price-sensitive and low income customers. The logical thing to do now is to test the results with real Vijayawada survey data, and indirect effects using bootstrapping.

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for regression use the number of regressors in the computation. If you desire a total sample size of 30, and you have 3 regressors, the number of subjects you'll need will be $28 + 3 + 1 = 32$ subjects.

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