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A CRITICAL EVALUATION OF THE CONSUMER CONFIDENCE SURVEY FROM INDIA[3]

This study examines the relevance of the quarterly Consumer Confidence Survey conducted by the Reserve Bank of India by analyzing consumers' spending behaviour vis-a-vis their expectations and perceptions of inflation in the Indian context. The ordered probit regression results demonstrate the positive influence of expected and perceived inflation and the negative influence of expected change in current real income and perceived change in current real income on the expected change in real spending. These results are not commensurate with underlying economic theories, which render the relevance and purpose of these surveys questionable. A few other results and observations from the respondents' demographic profile further strengthened our argument. In an emerging economy such as India, such surveys and their analyses are at a budding stage, and this is the first study to question the validity and relevance of these surveys. The present study also contributes to our understanding of how households expect and perceive inflation and incorporate them into their decision-making, which is pertinent for the efficacy of central banks as inflation targeting is the main objective of monetary policy.
Keywords: Inflation expectations; Perceived inflation; Consumer spending; Real income; Consumer Confidence Survey; Ordered probit
JEL: D12; D84; E20; E70

1. Introduction

The theories on expectations and perceptions about inflation emphasize the impacts of these concepts on the economic behaviour of individuals in terms of their investment, borrowing, and spending decisions (Springer, 1997; Bachmann et al.; 2015; Ichiue, Nishiguchi, 2015; Abaidoo, 2016; Vellekoop, Wiederholt; 2019). Both inflation expectations and perceptions are argued to influence each other, along with price changes in the environment, attitudes, income levels, economic forecasts, and social amplifications that affect either of them or both (Ranyard et al., 2008). Furthermore, inflation perceptions are expected to increase with a higher frequency of price increases of the experienced products, along with the information on past inflation of the product and its accessibility (Huber, 2011; Gärling et al., 2013; Del

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Missier et al., 2016). On the other hand, inflation expectations are anchored on the inflation forecasts of central banks as well as on demographic and socio-economic factors (Szyszko, Płuciennik; 2018; Das et al., 2019).

While numerous studies till date have focused on the formation of inflation expectations and perceptions (Ranyard et al., 2008; Branchinger, 2008; Drager 2015; Szyszko, Płuciennik, 2018), much less attention has been paid to understand how they affect consumers' behaviour in terms of economic decision making. Hence, this paper is focused on one such consequence of perceived and expected inflation, namely consumer spending. A dearth of literature both in the Indian and global context makes it a pertinent topic for further research. It is imperative to examine whether inflation perceptions and expectations and the consequent spending decisions of consumers are made consciously by considering all the available information or if they are merely naive statements. One way of doing so is to check for consistency of the relationship between inflation expectations and perceptions on the one hand and the spending behaviour of individuals on the other. For instance, using consumer survey data, Yadav and Shankar (2014-2015) demonstrated a positive relationship between expected inflation and current consumer spending and a negative relationship between perceived inflation and current consumer spending. The researchers considered data pertaining to the period of March 2011 – September 2014. However, it needs to be reviewed whether such observations hold good in the recent scenario. As inflation perceptions and expectations play a crucial role in determining current spending, which in turn might impact demand and growth in the aggregate economy, the measurement of public beliefs via their responses in the survey conducted by the central bank is important for policymakers and scholars.

Against this backdrop, this study first examines the effects of inflation expectations and perceptions on expected change and perceived change in consumer spending. The development of expected inflation might have some influence on perceived inflation and vice versa. Hence, this aspect is also examined. We also assess the impact of expected (perceived) inflation on expected (perceived) change in real income because the former may impact the expected (perceived) spending of households indirectly through the latter. Finally, the impact of demographic variables on consumer spending is also examined. The study uses quarterly Consumer Confidence Survey data pertaining to the period of March 2015 – December 2018, which are collected and published by the Reserve Bank of India (RBI).[4]

In its attempts to examine the interrelationship between consumers' expectations and perceptions about prices, spending, and income, this study has commented critically on the validity of the surveys conducted by the RBI. Although the same methodology framework applied by previous researchers in the Indian context was used, our analysis also investigates other dimensions for a complete understanding of the consumers' decision-making process. Furthermore, the analyses of our regression-based results are complemented with observations based on descriptive statistics to make our arguments rigorous, along with robustness checks. In a developing economy such as India, such surveys and their analyses are at a budding stage and need to be designed and implemented cautiously for their results to be meaningful in policymaking. Finally, an attempt to compare our findings with those of

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[4] At the time the research was conducted, Consumer Confidence Survey data with the RBI was available only for this period.

Yadav and Shankar (2014-2015) and Ichiue and Nishiguchi (2015) has been made in the conclusion section to consider the generality of the findings across various inflation rates. The study highlights how the lack of knowledge on prices, income, and spending behaviour can lead to unreliable survey data. Respondents' over-reporting of inflation expectations and perceptions, low education levels, hailing from the low and lower-middle-income groups, and getting analysis results that are not in commensurate with the economic theories defies the motive of using the survey information in the monetary policy. The surveys are of utmost importance for anchoring households' inflation expectations and, therefore, consumer welfare. The professionals and experts also rely on this survey data to gauge an economy's inflationary trends and monetary credibility. Overall, the efficacy of the central banks gets impacted when the survey data are not reliable, and hence these surveys need to be structured and analyzed carefully.

The rest of the paper has been organized as follows: Section 2 presents a review of the literature. Section 3 states the objectives, and Section 4 includes a description of the data and the methodology adopted. Section 5 presents the results, and Section 6 discusses the findings. Finally, Section 7 concludes the paper.

2. Literature Review

Among the notable studies in recent years, Brachinger (2006, 2008) outlined a theory on "perceived inflation" and constructed an index for calculating annual perceived inflation based on official data available on price changes rather than on survey data. The researcher applied the theory to Germany at the time of the introduction of Euro notes and coins, and used the Laspeyres formula for calculating the Index of Perceived Inflation. Jungermann et al. (2007) investigated the influence of purchase frequency and loss aversion on individual judgments of price changes. These factors were hypothesized by Brachinger (2008) in constructing the Index of Perceived Inflation.

Ranyard et al. (2008) offered a conceptual framework that started with price changes in the economy and examined how it led to the formation of perceived inflation among people, which was impacted by their attitude in the previous period and their personal income. Along with media and word of mouth, previously held expectations regarding the current period also contributed to inflation perceptions. Furthermore, all these factors led to the development of inflation expectations, which were also influenced by economic forecasts and social amplifications. Ultimately, these perceptions and expectations about prices shaped the economic behaviour of individuals in an economy.

Studies on the interaction between the inflation perceptions and expectations of households and monetary policy have examined the direction of causality from both sides. While Woodford (2005) concentrated on the importance of inflation expectations in monetary policy effectiveness, Dräger (2015) focused on reverse causation. He observed that actual inflation rates did not play a role in the development of inflation perceptions and expectations and that media had a small and asymmetric influence on the linkages among perceived, expected, and actual inflation. The study also showed that if the Swedish central bank wanted to anchor inflation expectations, involving other effective communication channels would

have had a direct impact on the inflation perceptions and expectations of households. Szyszko and Płuciennik (2018) considered a sample of three banks, namely, the Bank of England (BOE), the Bank of Sweden (SR), and the Czech National Bank (CNB), and showed that the central banks' forecasts acted as an anchor for the inflation expectations of the households in these countries.

Springer (1997) showed that with high expected inflation, real income expectations were revised downward and there was less consumer spending in all categories. Bachmann et al. (2015) observed that with an increase in expected inflation, consumer spending on durables did not increase and was also statistically insignificant. The researchers backed these results with the concept of money illusion, i.e., households in the country understood how nominal interest rates impacted spending but did not have an understanding of how inflation expectations did. In Japan, the consumers who expected higher inflation tended to increase their real current spending compared with that one year ago and reduce their real future spending (Ichiue and Nishiguchi, 2015). Abaidoo (2016) observed that inflation expectations had a positive impact on expenditures related to non-durable goods and services but a negative impact on durable goods, i.e., the substitution effect was stronger for durable goods than for non-durables and services. Vellekoop and Wiederholt (2019) examined the relationship between the inflation expectations of households and their consumption–saving decisions. The results indicated that the households expecting high inflation tended to spend more and save less.

Another strand of studies includes those based on experiments. Some of these investigations showed that the inflation perceptions of the respondents increased with the frequency of product purchase and their prices and knowledge about the past inflation of the product. The inflation perceptions were also significantly impacted by the products' accessibility and the attitude of the consumers (Huber, 2011; Gärling et al.; 2013; Del Missier et al., 2016). One experimental study by Gärling and Gamble (2008) conducted in the Euro region revealed that nominal representations of currencies did not have a significant effect on perceived and expected inflation. In a controlled, lab-based experiment involving 50 members, Luhan et al. (2014) showed that the respondents reacted less to expected changes in future prices and interest rates than to their actual changes. Based on this observation, the authors suggested that monetary policymakers must not rely on the announcement effects of future policies. Gärling et al. (2013) showed that the respondents' ratings for the expensiveness of the products and the total expenditures increased when they were informed about past inflation but did not decrease when they were informed about an increment in income.

Several studies have focused on the methodological issues in the measurement of perceived inflation. Hoffmann et al. (2006) observed that European Union consumer surveys provided direct direction and true indications of consumers' perceptions. The researchers reported that the people of Germany perceived high inflation only in January 2002, after which the inflation perceptions fell by the end of that year. This result contradicted the observations of Brachinger (2006, 2008), who argued that even in 2005, the percentage of consumers perceiving higher inflation was greater than that of those perceiving a lower inflation. Dias et al. (2010) indicated the inappropriateness of balance statistics for measuring the perceived inflation by the European Commission, where they showed no substantial difference between observed and perceived inflation at the time of currency changeover in the Euro region and

in individual countries. Meyer and Venkatu (2011) observed substantial demographic differences in inflation expectations in the US because of a mismeasurement of the respondents' average expectations. Following the distribution of the survey responses, the authors suggested that instead of mean, the median should be used for comparing the demographic differences in inflation expectations. Another study by Armantier et al. (2015) discussed the relevance of the questionnaires used by the central bank of the US to analyze the inflation perceptions and expectations. They found that the respondents acted in sync with what they stated in the survey, which confirmed the relevance of the surveys on inflation expectations in the US. Respondents who did not behave according to their inflation expectations had lower education, numeracy skills, and financial literacy. This finding also implies that these surveys are useful for devising monetary policies aimed at targeting inflation.

2.1. Studies conducted in the Indian context

Not many studies have been conducted on inflation expectations and perceptions in the Indian context. To the best of our knowledge, the first study to empirically analyze inflation expectations and consumer spending in India is the one by Yadav and Shankar (2014-2015). They estimated models of "real expected spending one year from now" and "real current spending" using the ordered probit method. The independent variables were expected and perceived inflation, along with control variables such as expectations and perceptions on household circumstances, income, general economic conditions, and employment. The results suggested that the respondents who expected higher inflation were more likely to increase their real current spending compared with the spending one year ago and decrease their real future spending. This finding agrees with the general understanding that expected real spending decreases with expected inflation.

Several RBI reports have been published to shed light on the perspectives of households on inflation and their expectations. In one such report (February 2019), results pertaining to a survey conducted in December 2018 in 18 cities across 5828 households were presented. The findings showed that compared with November 2018, the respondents expected a sharper decline in the general price level for three-month and one-year ahead time horizons in almost all the product groups. The highest current inflation was perceived by self-employed individuals, respondents in the age groups of 40-45, 50-55 and ≥60 years, and those from Ranchi and Kolkata. Another Consumer Confidence Survey report of RBI (February 2019) assessed the expectations and perceptions of households about inflation, their income and spending, general economic condition, and employment scenario. The survey was conducted in December 2018 and encompassed 5347 households across 13 cities in India. A Consumer Confidence Index (CCI) was constructed, which signified that although the respondents were pessimistic, overall, the CCI increased by 2.8 points against the Current Situation Index and by 8.9 points against the Future Expectations Index. Current perceptions about overall economic condition and employment were negative but showed signs of improvement in the future. The respondents were optimistic about the current as well as one-year ahead price situation. Sentiments about current and future spending, as well as current income, were mostly unaltered, while the respondents were optimistic about their future income.

The latest study in the Indian context by Das et al. (2019) analyzed the dynamics of inflation expectations along with their relevance using the Inflation Expectations Survey of Households (IESH) conducted by the RBI. The authors quantified the qualitative values of the survey using HOPIT regression and compared them with the balance statistic published by the RBI. The results indicated that quantifying the expected inflation from the qualitative surveys was a viable alternative to balance the statistics for tracking the actual inflation rate. The study also illustrated that the extreme inflation expectation values reported by the respondents were primarily influenced by their demographic and socio-economic experiences. Furthermore, since the respondents might most often not be able to recall the actual inflation, qualitative surveys are preferred.

A review of the extant literature presented above suggests that studies across many countries, mostly developed ones, have addressed different aspects of inflation expectations and perceptions. However, these investigations have failed to reach a consensus on their economic interrelationship with other variables. The academia has also questioned the relevance of such consumer surveys conducted by the central banks of various countries. Several experimental studies were also conducted to analyze the diverse aspects of inflation perceptions and the impacts of the anticipation effect and income knowledge on inflation expectations. Internationally, studies have also dealt with the problem of how central banks can communicate effectively for a better and more direct impact on inflation expectations and perceptions of consumers. In developing economies, particularly in the Indian context, research on these issues is at a nascent stage. While the RBI analyzes the inflation expectations, perceptions, and consumer spending behaviour in India, the generalization of these results across time could not be confirmed. Hence, the present study attempts to complement the existing research in terms of using more meaningful methodologies and in-depth data analyses for a different time period characterized by differing economic conditions.

3. Objectives, Hypotheses and Models

3.1. Objectives

The previous studies on inflation perceptions and expectations, particularly the one by Yadav and Shankar (2014-2015), motivated us to further analyze the inflation expectations and perceptions with regard to consumer spending in India for a different time period of March 2015 – December 2018. Our study period was less inflationary compared with 2011-2014. Additionally, we attempt to explore a few other dimensions of the interrelationship between the expected and perceived inflation and spending of consumers. The objectives to be addressed in this study are:

Objective 1: To examine the effects of inflation expectations and perceptions on the consumers' expected change in real spending;

Objective 2: To analyze the effects of inflation expectations and perceptions on the consumers' perceived change in current real spending;

Objective 3: To assess the bivariate relationship between expected and perceived inflation;

Objective 4: To examine the effects of expected (perceived) inflation on the change in real expected (perceived) income. This analysis may help us understand whether there is an indirect relationship between expected (perceived) inflation and spending while working through changes in expected (perceived) income;

Objective 5: Based on the above results, we attempt to critically assess the relevance of the Consumer Confidence Survey conducted by the RBI. This objective will be addressed via a detailed discussion of the results obtained for the abovementioned objectives.

3.2. Hypotheses

On the basis of the abovementioned objectives, we formulate six hypotheses: four pertaining to the first two objectives and two related to the third and fourth objectives. Regarding the relationship between inflation expectations and consumers' expected change in real spending, we conjecture that when prices are expected to rise, people plan to spend less in the future. Even if the expenditure on items of necessary consumption and, thus, the overall nominal spending remains unchanged, the expected price hike is likely to reduce the expected real spending. Real spending will increase with the increase in prices only if the increase in nominal spending exceeds the increase in prices. However, the survey data contain information only on the expected direction of change and not the dimension of change. Based on the above argument, Hypotheses 1 is formed as,

H1: *Expected inflation has a negative impact on the expected change in real spending*

Similarly, following Objective 2 on the impact of inflation expectations and perceptions on consumers' perceived change in current real spending, we surmise that when prices are expected to rise, current spending will increase. Therefore, an expected hike in prices for given nominal spending is perceived to increase current real spending. Hypothesis 2 is formed as

H2: *Expected inflation has a positive impact on perceived change in current real spending*

Furthermore, when current prices are perceived to increase, people may spend less in the present. Therefore, a perceived increase in prices for given nominal spending may lower perceived current real spending. Hypothesis 3 is formulated as,

H3: *Perceived inflation has a negative impact on perceived change in current real spending*

Finally, when current prices are perceived to increase, people may spend less in the present and may plan to increase spending in the future. Hence, a perceived increase in prices for given nominal spending is expected to increase expected real spending. Hence, hypothesis 4 is formulated as,

H4: *Perceived inflation has a positive impact on the expected change in real spending*

Ranyard et al. (2008) argued that inflation expectations and perceptions might impact each other with a likely positive effect. They argued that inflationary expectations of the current period formed in some previous period could lead to biased perceptions about the current period, as experienced at the time of currency changeover in the Euro region. Similarly, high

inflation perceptions can lead to high inflation expectations as well. However, the effect could also be negative if the current high inflation is expected to subside in the subsequent periods and vice versa. This bivariate relationship between expected inflation and perceived inflation is tested via hypotheses H5 (a) and H5 (b).

H5 (a): *Expected inflation has a positive impact on perceived inflation*

H5 (b): *Perceived inflation has a positive impact on expected inflation*

Finally, we surmise that expected (perceived) inflation may impact expected (perceived) change in real spending indirectly via expected (perceived) change in real income. When prices are expected to escalate (down), nominal income may not change readily, but real income is impacted negatively (positively). People would adjust their real spending according to the changes in their real income. Thus, we expect an inverse relationship between expected inflation and expected change in real income. To verify our claim, we construct and test the following hypotheses.

H6 (a): *Expected inflation has a negative impact on the expected change in real income.*

H6 (b): *Perceived inflation has a negative impact on perceived change in real income.*

If most economic agents act according to the arguments presented above, their behaviour can be predicted based on their expectations and perceptions. The policies of central banks may be more effective if they are formulated by incorporating these predictions.

Figure 1

Conceptual framework of the relationships hypothesized among the expected (perceived) inflation, expected (perceived) change in real spending and expected (perceived) change in real income
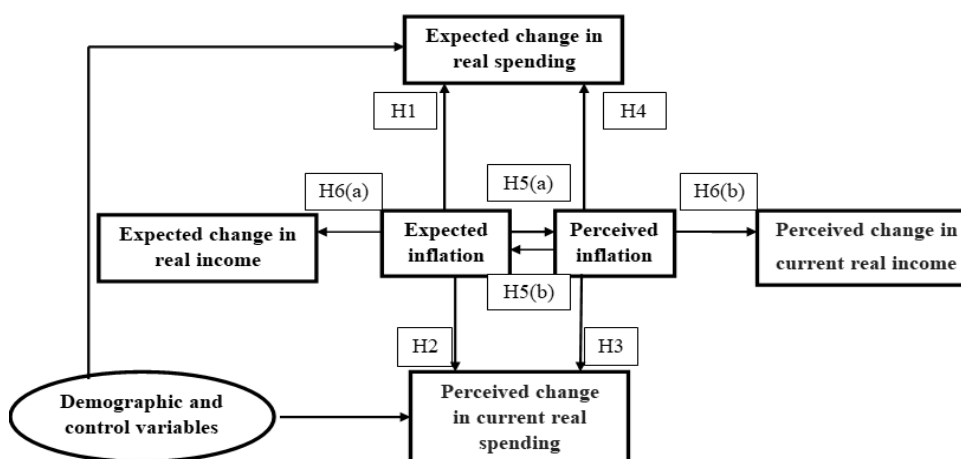
Source: Authors.

3.3. Models

Table 1 presents a description of the models estimated. Hypotheses 1-4 are tested by estimating two models, Model 1 and Model 2. And Model 3 and Model 4 test hypotheses 5 and 6.

Table 1

Description of the Models

Models	Dependent variable	Independent variables
Model 1	Expected change in real spending one year from now.	i) Outlook on general prices one year ahead; we term it as 'expected inflation' or 'prices one year from now'[5] ii) Perception on general prices one year ago; termed as 'perceived inflation' or 'prices compared to one year ago' ii) Control variables, namely, expected general economic conditions, expected employment scenario, and expected change in real income, all one year ahead iv) Demographic variables; refer to Table 3
Model 2	Perceived change in current real spending compared to one year ago.	i) 'Expected inflation' or 'prices one year from now' ii) 'Perceived inflation' or 'prices compared to one year ago' iii) Control variables, namely, perception on general economic conditions, perception on employment scenario, and perceived change in current real income as compared to one year ago iv) Demographic variables, mentioned in Model 1
Model 3(a) Model 3(b)	Expected inflation Perceived inflation	i) 'Perceived inflation' ii) 'Expected inflation'
Model 4(a) Model 4(b)	Expected change in real income Perceived change in current real income	i) 'Expected inflation' or 'prices one year from now' ii) 'Perceived inflation' or 'prices compared to one year ago'

4. Data Description and Methodology

The paper is primarily based on pooled micro-data from the Consumer Confidence Survey conducted by the RBI[6]. The data includes quarterly observations for the period March 2015 – December 2018. This survey was conducted in 13 cities, namely Bangalore, Chennai, Delhi, Mumbai, Ahmedabad, Bhopal, Guwahati, Hyderabad, Jaipur, Kolkata, Lucknow, Patna, and Trivandrum, with a total number of respondents of 87466.

The Consumer Confidence Survey questionnaire deals with a variety of questions and obtains qualitative responses on the expectations and perceptions of consumers on the general price level, household spending, income, general economic conditions, employment scenario, and other economic indicators. Hence these variables made the basis of our study for conducting the analysis. All the variables considered for analysis are suggested by the literature (Yadav, Shankar, 2014-2015; Ichuie, Nishiguchi, 2015; Bachmann et al., 2015). We have also compared the results of our study in conclusion with the studies mentioned above, as the variables used in all these studies are basically the same. These responses are recorded on a

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[5] Expected inflation (perceived inflation) and prices one year from now (prices compared to one year ago) are used interchangeably in the paper.

[6] The possible differences arising out of change in time of the survey collected is not considered in the paper.

three-point scale, i.e., increase, remains the same, and decrease. Following Yadav and Shankar (2014-2015) and Ichuie and Nishiguchi (2015), we calculated the expected and perceived changes in real spending and real income by synthesizing the responses to four questions about expected (perceived) inflation and expected change in nominal spending (change in actual nominal spending compared to one year ago), i.e., Question 14 (12) and Question 9 (7) in the Consumer Confidence Survey, respectively. Similarly, we used Question 5 and Question 6 for change in actual nominal income compared to one year ago and expected change in nominal income, respectively.

The questions are as follows:

Q9: Do you plan to increase or decrease your spending within the next twelve months?

a. Increase
b. Neither increase nor decrease
c. Decrease

Q14: In which direction do you think prices will move one year from now?

a. Will go up
b. Will remain almost unchanged
c. Will go down

Q7: How have you (or other family members') changed consumption spending compared with one year ago?

a. Increase
b. Neither increase nor decrease
c. Decrease

Q12: How do you think the overall prices of goods and services have changed compared with one year ago?

a. Gone up
b. Remained almost unchanged
c. Gone down

Q5: How has your income (or/and other family members' income) changed from one year ago?

a. Increased
b. Remained the same
c. Decreased

Q6: What do you expect your income (or other family members' income) will be one year from now?

a. Increase
b. Remain the same

c. Decrease

Similarly, expectations and perceptions about general economic conditions and employment scenarios are measured through Question 2 (1) and Question 11(ii) (11(i)) in the Consumer Confidence Survey, respectively. The questions are as follows:

Q2: How do you foresee economic conditions one year from now?

a. Will improve
b. Will remain the same
c. Will worsen

Q1: How do you think economic conditions have changed compared with one year ago?

a. Improved
b. Remained the same
c. Worsen

Q11(ii): In consideration of the situation one year from now, what are your views on the employment scenario?

a. Will improve
b. Will remain the same
c. Will worsen

Q11(i): In consideration of the situation as compared to one year ago, what are your views on the employment scenario?

a. Improved
b. Remained the same
c. Worsen

Expectations and perceptions about general economic conditions, employment scenario, and other economic indicators were coded as +1, 0, and -1, for improve, remains the same, and worsen, respectively. We coded the change in nominal spending and coded price as +1, 0, and -1 for increase, remains the same, and decrease, respectively. We further used them to calculate expected and perceived change in real spending and real income.

Expected change in real spending = Expected change in nominal spending – expected inflation;

Perceived change in current real spending = Change in actual nominal spending compared to one year ago – perceived inflation compared to one year ago;

Expected change in real income = Expected change in nominal income – expected inflation;

Perceived change in current real income= change in actual nominal income compared to one year ago – perceived inflation compared to one year ago;

Table 2

Calculation of Expected Change in Real Spending or Real Income[7]

		Prices one year from now		
		Increase	Remains constant	Decrease
Nominal expected spending or income	Increase	Same	Increase	Significant Increase
	Remain constant	Decrease	Same	Increase
	Decrease	Significant Decrease	Decrease	Same

The responses to the question on change in real spending are given in Table 2. These responses were used as a dependent variable in Models 1 and 2. Each of the variables mentioned above comprised five categories, which were explained using a representative matrix, as shown in Table 2. Since the values ranged from −2 to 2, the five categories were identified as significantly decrease (−2), decrease (−1), remains constant (0), increase (1), and significantly increase (2). The categories of the remaining three variables were also formulated in a similar fashion. The survey also provided information on a host of demographic variables, all categorical in nature. We used the following coding for the demographic variables:

- Gender: male = 0, female = 1

- Employment status: employed = 1, otherwise = 0

- Age groups: ages between 22-59 = 0, age ≥ 60 = 1

- Family size (FS): number of family members ≤ 4 = 0, 5 and more = 1

- Annual income: income ≥ ₹ 5 lakhs = 3; income between ₹ 3 lakhs to 5 lakhs = 2; income between ₹ 1 lakh to 3 lakhs = 1; and income ≤ ₹ 1 lakh or less = 0.

Table 3 summarizes the data on demographic variables. As evident from the figures, there was not much of a disparity in the number of males and female respondents. This lack of significant difference also applied to the number of respondents in the categories of family size. However, the categories of age group, employment status, and annual income were substantially different in terms of the percentage of respondents in each category. It should also be noted that the majority of the men and women belonged to the working age group category of 22-59 years and were either self-employed or unemployed. Moreover, nearly 90% of the respondents belonged to the low and lower-middle income classes, with an annual income of less than ₹ 3 lakhs (Mallapur, 2019).

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[7] The respondents mentioned no objective values or the extent of change, hence for simplicity coding assumes that the inflation is of the same size as the nominal change.

Table 3

Details of Demographic Variables

Variables		Total Number	Percent
Gender	Female	41629	47.6
	Male	45837	52.4
Age	22-59 years	78946	90.3
	60 years & above	8520	9.7
Occupation of Respondent	Employed	21455	24.5
	Others	66011	75.5
Number of family members	Equal or less than 4	49957	57.1
	Above 4	37509	42.9
Annual Income	Rs. 5 lakh or more	2480	2.8
	Rs. 3 lakh to 5 lakh	6524	7.5
	Rs. 1 lakh to 3 lakh	39830	45.5
	Rs 1 lakh or less	38632	44.2

The models (except for Model 3) outlined in Table 1 were estimated using ordered probit because our data were ordered and categorical in nature. The same technique was employed by Yadav and Shankar (2014-15) and Ichuie and Nishiguchi (2015) too; hence, our results could be directly compared with their findings. We also obtained alternative estimates with ordered logit regression. However, the results remained the same. Hence, we have reported only the results pertaining to ordered probit models.

For all the models, the probit function is

$$P_i = \frac{1}{1+e^{-z_i}} = \frac{e^{z_i}}{1+e^{z_i}} \tag{1}$$
where:
P_i is the maximum likelihood function,
and $z_i = \beta_{0i} + \beta_{1i}X_{ji} + u_i$
where:
β_{0i} – intercept term
β_{1i} – vector of parameters for the ith observation
X_{ji} – vector of independent variables for the ith observation (including the control variables), and
u_i – error terms

5. Results

The estimates of Models 1 and 2 are presented in Tables 4 and 5, respectively. Table 4 shows that most of the variables were statistically significant at 1% and 5%. We observed that the odds of an expected change in real spending for an increase in prices one year from now were 46.43 times higher when compared with a decrease in expected prices. Alternatively, people were more likely to increase their expected spending in the face of an increase in expected prices. Hence, we rejected hypothesis, H1. On the other hand, the expected change in real spending was again more likely to increase with an increase in prices compared to one year ago. Hence, we accepted hypothesis H4.

Among the control variables, expected changes in economic conditions and employment scenarios exerted a positive impact on the expected change in real spending. However, for all the categories, the expected change in real income of the households impacted the expected change in real spending negatively. This finding implies that when real income is expected to increase, real spending is expected to decline and vice versa. Economic theorizing suggests that real spending should increase (decrease) with an increase (decrease) in real income. However, the opposite may occur in certain instances. For example, when there is a significant expected increase in real income, it implies that nominal income is expected to increase and prices are expected to decrease. In such a scenario, expected real spending will decline only if the expected decrease in price exceeds the expected increase in nominal income. Further possibilities can be explained by mapping the entries of real expected spending and real expected income from the matrices presented in Table 2.

An increase in expected real income (described by positive values, 1 and 2 in Table 2) is affected by three alternative combinations:

- Nominal expected income – increase & prices one year from now – remains constant (+1)

- Nominal expected income – increase & prices one year from now – decreases (+2)

- Nominal expected income – remains constant & prices one year from now – decreases (+1)

This refers to two alternative price situations: i) prices one year from now remain constant and ii) prices one year from now decline. Corresponding to these two price situations, real spending will decline (have negative value) only under one possible circumstance; i.e. Expected nominal spending decreases when prices one year from now remain constant.

Therefore, our analysis indicates that when there is an increase in expected nominal income and prices one year from now remain constant, expected real spending may fall because of a fall in the expected nominal spending. This occurrence is counter-intuitive but could be triggered by other factors, such as an increased tendency to save and invest more, although the present research fails to draw any inference about it owing to the unavailability of data.

Most of the demographic control variables were statistically significant at 1%. We observed that women were 0.96 times less likely to expect an increase in real spending compared with men. Similarly, the likelihood of expected real spending decreasing for a household having five and more members was 0.91 times higher than that of a household having four or less

members. This result implies that bigger families are more likely to expect their real spending to decrease in the future than small families. This attitude might be influenced by socio-economic dimensions, such as smaller families expecting an improvement in quality of life or spending more on education. The respondents in the age group of 60 or more than 60 years were found to be more likely to increase their real spending than those in the age group of 22-59 years and above, which implies that respondents in the working age group tend to spend less than those in the older age group. Finally, the odds of expected real spending decreased by 0.96 times for respondents in the annual income group of ₹ 3–5 lakhs, which shows that people with a high annual income are less likely to increase their real spending than those with a low annual income. The high-income class tends to have a low marginal propensity to consume; consequently, this category is less vulnerable to price or income changes and is, therefore, less likely to increase real spending.

Table 4

Estimation results for the impact of expected/perceived inflation along with demographic and control variables on the expected change in real spending

Independent Variables[$]		Parameter Estimates	Exp (B)
Prices one year from now	Increase	3.84**	46.43
	Remain the same	2.09**	8.11
Prices compared to one year ago	Increase	0.59**	1.82
	Remain the same	0.29**	1.33
Outlook on general economic condition one year ahead	Increase	-0.01	0.99
	Remain the same	0.12**	1.13
Outlook on employment scenario one year ahead	Increase	0.04*	1.04
	Remain the same	0.13**	1.13
Expected change in real income	Significant increase	-0.53**	0.59
	Increase	-0.28**	0.76
	Remain the same	-0.19**	0.83
	Significant decrease	-0.09*	0.91
Perception on general economic condition one year ago	Increase	-0.02	0.98
	Remain the same	0.01	1.01
Perception on employment scenario one year ago	Increase	0.06**	1.16
	Remain the same	0.02	1.02

Independent Variables$^{\$}$		Parameter Estimates	Exp (B)
Perceived change in current real income	Significant increase	-0.13**	0.88
	Increase	-0.03	0.97
	Remain the same	0.05	1.05
	Significant decrease	0.05	1.05
Gender =Female		-0.04**	0.96
Age $\geq$ 60 years		0.09**	1.09
Occupation of Respondent = Employed		-0.05**	0.95
Number of family members 5 and more		-0.10*	0.91
Annual Income	Rs. 5 lakh or more	-0.01	0.99
	Rs. 3 lakh to 5 lakh	-0.04*	0.96
	Rs. 1 lakh to 3 lakh	-0.01	0.99
Adjusted R square		0.66	
Observations		87466	

*, **: Parameter estimates significant at 5 and 1%, respectively,
$: For all the independent and demographic variables, -1 and 0 has been the reference category, respectively.

Table 5
Estimation results for the impact of expected/perceived inflation along with demographic and control variables on the perceived change in current real spending

Independent Variables$^{\$}$		Parameter Estimates	Exp (B)
Prices one year from now	Increase	0.36**	1.44
	Remain the same	0.27**	1.31
Prices compared to one year ago	Increase	3.86**	47.40
	Remain the same	1.99**	7.30
Outlook on general economic condition one year ahead	Increase	0.10**	1.10
	Remain the same	0.08**	1.08
Outlook on employment scenario one year ahead	Increase	0.03*	1.03
	Remain the same	0.03*	1.03

Independent Variables[$]		Parameter Estimates	Exp (B)
Expected change in real income	Significant increase	-0.26**	0.77
	Increase	-0.20**	0.82
	Remain the same	-0.21**	0.81
	Significant decrease	-0.09	0.91
Perception on general economic condition one year ago	Increase	-0.05**	0.95
	Remain the same	0.05**	1.05
Perception on employment scenario one year ago	Increase	0.08**	1.18
	Remain the same	0.09**	1.10
Perceived change in current real income	Significant increase	-0.58**	0.56
	Increase	-0.27**	0.76
	Remain the same	-0.10*	0.91
	Significant decrease	-0.03	0.98
Gender = Female		-0.08**	0.93
Age ≥ 60 years		0.05*	1.05
Occupation of Respondent = Employed		-0.05**	0.96
Number of family members 5 and more		-0.10**	0.91
Annual Income	Rs. 5 lakh or more	-0.05	0.95
	Rs. 3 lakh to 5 lakh	-0.02	0.99
	Rs. 1 lakh to 3 lakh	-0.01	0.99
Adjusted R square		0.59	
Observations		87466	

*, **: Parameter estimates significant at 5 and 1%, respectively,
[$]: For all the independent and demographic variables, -1 and 0 has been the reference category, respectively.

Estimates of Model 2 presented in Table 5 show that the odds of perceived change in current real spending for an increase in prices one year from now were 1.44 times more when compared with a decrease in expected prices. In other words, with an increase in prices one year from now, the respondents were more likely to perceive an increase in their current real

spending. Hence, we accepted hypothesis H2. Similarly, a unit increase in prices compared to one year ago increased the odds of perceived change in current real spending by 3.86% when compared with a decrease in prices compared to one year ago. This result implies that the perceived increase in nominal spending will exceed the increase in prices compared to one year ago, thereby resulting in an increase in real spending. Hence, we rejected hypothesis H3. Similar to Model 1, expected and perceived changes in economic conditions and employment scenarios exerted a positive impact on the perceived change in current real spending, except for the perception of an increase in general economic condition. The control variable, the perceived change in the current real income of the households, had a negative impact on the perceived change in current real spending. This observation could be explained in a manner similar to the one offered under Model 1. Table 5 also shows that most of the demographic variables were statistically significant at 1%, except for annual income.

Table 6

Estimation results for the bivariate relationship between expected and perceived inflation

Independent Variables$^\$$	Model 3(a) Dependent variable: Expected inflation	Model 3(b) Dependent variable: Perceived inflation
Kendall's tau-b (τ_b) correlation coefficient		
Perceived inflation	0.46**	1.00
Expected inflation	1.00	0.46**
Observations	87466	

**Parameter estimates significant at 1 percent.

The relationship between perceived and expected inflation estimated using Models 3(a) and 3(b) are presented in Table 6. A strong and positive correlation was seen between perceived inflation and expected inflation, with $\tau_b = 0.46$. This finding implies that a period of high perceived inflation is expected to be followed by a subsequent period of high inflation and vice versa. Similarly, when consumers expect high inflation in the future, they are more likely to perceive the current inflation also to be high and vice versa. Hence, we accepted hypotheses, H5(a) and H5(b).

Table 7

Estimation results for the impact of expected (perceived) inflation on the change in real expected (perceived) income

Independent Variables$^\$$		Model 4(a) Dependent variable: Expected change in real income		Model 4(b) Dependent variable: Perceived change in current real income	
		Parameter Estimates	Exp (B)	Parameter Estimates	Exp (B)
Prices one year from now	Increase	3.13**	22.86	-	-
	Remain the same	1.61**	5.02	-	-
Prices compared to one year ago	Increase	-	-	3.43**	30.85
	Remain the same	-	-	1.57**	4.82
Adjusted R square		0.44		0.38	
Observations		87466			

**Parameter estimates significant at 1 percent.
$: For all the independent variables, -1 has been the reference category.

Finally, the estimates of Model 4(a) and 4(b) presented in Table 7 show that the odds of expected (perceived) change in real income for an increase in prices one year from now (prices compared to one year ago) were 22.86 (30.85) times more when compared with a decrease in prices one year from now (prices compared to one year ago). Alternatively, expected (perceived) real income increased with the increase in prices one year from now (prices compared to one year ago) and vice versa. Therefore, we rejected hypotheses H6(a) and H6(b). On the face of an increase in prices, real income increased only when the increase in nominal income exceeded the increase in prices. However, since the respondents only expressed their views on the direction of expected and perceived changes in prices, income, and spending, we were unable to verify the above statement. Overall, on the triangular and indirect relationship among expected (perceived) inflation, expected (perceived) real income, and expected (perceived) real spending, we observed that expected (perceived) inflation led to an increase in expected (perceived) real income. In other words, nominal income increased more than the increase in prices, which decreased the expected (perceived) real spending, i.e., nominal spending either remained constant or declined. These connections lacked meaningful economic interpretations and, hence, may imply casual rather than attentive responses.

5.1. Robustness checks

We checked the robustness of the results for Models 1 and 2 by changing the dependent variable. We used nominal spending (expected and actual) instead of real spending (expected and perceived) to help us understand whether our results were impacted by the method used to construct the variables of real spending and real income. Furthermore, we used nominal income (expected and actual) instead of the real income as a control variable with a host of demographic variables. The results presented in Tables 8 and 9 establish the robustness of Models 1 and 2, respectively. We observed that the odds of an expected change in nominal spending for an increase in prices one year from now were 2.54 times more compared with a decrease in prices one year from now. This finding implies that people are more likely to increase their expected nominal spending in the face of an increase in future prices. The expected nominal spending was again more likely to increase with an increase in prices compared to one year ago (Table 8). Similarly, Table 9 shows that the odds of a change in actual nominal spending for an increase in prices one year from now were 1.61 times higher when with a decrease in prices one year from now. A unit increase in prices compared to one year ago increased the odds of change in actual nominal spending by 1.23% when compared with a decrease in prices compared to one year ago. Most of the demographic and control variables were statistically significant in both the models and demonstrated the same relationship with their respective dependent variables as in the case of baseline results presented in Tables 4 and 5. Hence, our results pertaining to the relationship between expected and perceived inflation and expected and perceived change in real spending are reliable and free from bias or any kind of measurement.

Table 8

Robustness check by finding the impact of expected/perceived inflation along with demographic and control variables on the expected change in nominal spending

Independent Variables[$]		Parameter Estimates	Exp (B)
Prices one year from now	Increase	0.93**	2.54
	Remain the same	0.52**	1.68
Prices compared to one year ago	Increase	0.74**	2.10
	Remain the same	0.39**	1.49
Outlook on general economic condition one year ahead	Increase	-0.02	0.99
	Remain the same	0.12**	1.13
Outlook on employment scenario one year ahead	Increase	0.04*	1.04
	Remain the same	0.13**	1.14
Expected change in nominal income	Increase	-0.26**	0.77
	Remain the same	-0.03	0.97
Perception on general economic condition one year ago	Increase	-0.02	0.98
	Remain the same	0.01	1.01
Perception on employment scenario one year ago	Increase	0.06**	1.06
	Remain the same	0.03	1.03
Change in actual nominal income	Increase	-0.15**	0.86
	Remain the same	-0.09**	0.91
Gender =Female		-0.04**	0.96
Age ≥ 60 years		0.09**	1.09
Occupation of Respondent = Employed		-0.05**	0.95
Number of family members 5 and more		-0.11**	0.89
Annual Income	Rs. 5 lakh or more	-0.01	0.99
	Rs. 3 lakh to 5 lakh	-0.04*	0.96
	Rs. 1 lakh to 3 lakh	-0.01	0.99

Adjusted R square	0.54
Observations	87466

*, **: Parameter estimates significant at 5 and 1%, respectively,

\$: For all the independent and demographic variables, -1 and 0 has been the reference category, respectively

Table 9

Robustness check by finding the impact of expected/perceived inflation along with demographic and control variables on the change in actual nominal spending

Independent Variables$		Parameter Estimates	Exp (B)
Prices one year from now	Increase	0.48**	1.61
	Remain the same	0.32**	1.37
Prices compared to one year ago	Increase	1.23**	3.41
	Remain the same	0.60**	1.81
Outlook on general economic condition one year ahead	Increase	0.10**	1.10
	Remain the same	0.07**	1.07
Outlook on employment scenario one year ahead	Increase	0.03	1.03
	Remain the same	0.03	1.03
Expected change in nominal income	Increase	-0.07**	0.94
	Remain the same	0.01	1.01
Perception on general economic condition one year ago	Increase	-0.05**	0.95
	Remain the same	0.06**	1.06
Perception on employment scenario one year ago	Increase	0.09**	1.09
	Remain the same	0.10**	1.11
Change in actual nominal income	Increase	-0.42**	0.66
	Remain the same	-0.14**	0.87
Gender = Female		-0.08**	0.93

Age ≥ 60 years		0.05*	1.05
Occupation of Respondent = Employed		-0.05**	0.95
Number of family members 5 and more		-0.11**	0.90
Annual Income	Rs. 5 lakh or more	-0.05	0.95
	Rs. 3 lakh to 5 lakh	-0.02	0.99
	Rs. 1 lakh to 3 lakh	-0.01	0.99
Adjusted R square		0.43	
Observations		87466	

*, **: Parameter estimates significant at 5 and 1%, respectively,
$: For all the independent and demographic variables, -1 and 0 has been the reference category, respectively

6. Discussion

Objective 5, i.e., the relevance of the Consumer Confidence Survey conducted by the RBI was critically examined. Most of our results on the relationship between expected and perceived inflation on the one hand and expected and perceived real spending on the other contradicted the underlying economic theories explaining the relationship between these variables. The results were also in contrast with the observations of Yadav and Shankar (2014-15). Hence, these findings raise questions on the reliability of these survey responses and the extent to which they can be considered to reflect informed decision-making. Furthermore, we estimated alternative models using data on essential and nonessential spending, and the results were no different. Owing to the paucity of space, they have not been reported. The likelihood of increase was slightly lower for nonessential spending than for essential spending, although all significant at 1%. The responses on income and spending in nominal terms, along with price movements were collected, and their implications in real terms were calculated. If the results are meaningful, we can claim that the responses were based on firm judgment and understanding of economic linkages between the variables and that they have implications for consistent decision-making. However, no such results were obtained. Therefore, it is evident that the surveys have low reliability. The demographic variables presented in Table 3 show that 90% of the respondents belonged to low and lower-middle income classes, the majority of whom were either unemployed or self-employed, which fails to generate optimism regarding the reliability of the survey. Furthermore, the survey contained information on the individual respondents' level of education. Since the data had too many classifications and lacked clarity in categorization, they were not included in regression analysis. However, by grouping them into broad categories, we observed that 30.5% of the respondents were either illiterate or had an education up to the primary level only. Nearly 52% and 80% were educated below 12th grade and graduation, respectively.

Since the respondents' minimum age was 22 years, it is less likely that those who were not even graduates were in the process of completing their degrees. Hence, their low level of education could be another factor for their random or not so well-thought-out responses. Had there been data on the extent of changes in prices, income, and spending perceived or expected by them or on expenditures on durable or non-durable goods, attempts could have been made to elaborate on the inconsistencies observed in the results. In the absence of such information, the obtained results are, at best, merely indicative of a survey with low reliability or validity conducted by the RBI.

Some observations from the survey data may help us in strengthening our argument. We categorized individual responses on perceived and expected inflation into nine categories, as presented in Table 10. For each category, the responses on actual and expected spending are also mentioned and their percentages are given in parentheses. From the figures, it is obvious that a large majority (nearly 73%) perceived as well as expected an increase in prices. Moreover, a whopping 87%–89% of these respondents claimed a rise in their actual as well as expected spending. Again, a vast majority of respondents, i.e., 73%–76%, in the category that expected the prices to remain the same and perceived them to be high reported a rise in their expected as well as actual spending. Similarly, 67%–77% of the respondents in the category that perceived the prices to remain constant and expected them to increase stated a rise in both actual and expected spending. On the other hand, when respondents perceived the prices to be low and expected them to remain the same and vice versa, a majority expressed an increase in both actual and expected spending. In the last case too, i.e., the one in which the respondents perceived and expected no change in the prices, a majority of them reported an increase in their actual and expected nominal spending. Also, barring the case of low perceived and expected inflation, a majority of the responses favoured increased actual as well as expected spending. This finding implies that the respondents do not revise their expenditures in line with their perceived and expected price changes. This result may also indicate that their expenditures consist mostly of necessities and that nominal income is able (or expected) to accommodate increased spending in the face of increasing prices. Alternatively, their real income either remained (or expected to remain) constant or increased, which could not be explained by the obtained data. Therefore, regardless of the implications, such a behaviour nullifies the purpose of considering information on perceived and expected inflation.

Moreover, we analyzed the cross-tabulations between perceived and expected inflation and change in actual and expected change in nominal spending using the chi-square test of independence. The chi-square test demonstrated the presence of a statistically significant association between the categorical variables listed in Table 10. Furthermore, based on CPI data published by the RBI, the average quarterly inflation for the period ranging from Q1 2014-15 to Q3 2018-19 was at −0.11%, whereas the average quarterly year-on-year inflation was at 0.01%. Despite the presence of a low inflation environment, such huge responses in favour of high perceived and expected inflation signify either perception and expectation bias or error in the calculation of CPI. Given that the new CPI series has a revised basket of a rather recent period, the error in its calculation is less likely. Hence, apparently, there is a tendency among individuals to exaggerate perceived and expected inflation along with perceived and expected spending.

Table 10

Summary of responses on inflation and spending

Cases	Change in nominal spending		
	Categories	Actual	Expected
PI: High EI: High Total no. 63533 (72.63)	Increased	55625 (87.55)	56677 (89.16)
	Remain the same	6472 (10.19)	5592 (8.80)
	Decreased	1436 (2.26)	1264 (1.99)
PI: High EI: Low Total no. 3727 (4.26)	Increased	2880 (77.27)	2542 (68.21)
	Remain the same	649 (17.41)	570 (15.29)
	Decreased	198 (5.31)	615 (16.50)
PI: Low EI: High Total no. 1200 (1.37)	Increased	644 (53.66)	906 (75.50)
	Remain the same	273 (22.75)	167 (13.92)
	Decreased	283 (23.58)	127 (10.58)
PI: Low EI: Low Total no. 2798 (3.19)	Increased	906 (32.38)	1066 (38.09)
	Remain the same	553 (19.76)	474 (16.94)
	Decreased	1339 (47.85)	1258 (44.96)
PI: High EI: Remain the same Total no. 5694 (6.51)	Increased	4357 (76.51)	4172 (73.27)
	Remain the same	1140 (20.02)	1328 (23.32)
	Decreased	197 (3.45)	194 (3.40)
PI: Low EI: Remain the same Total no. 957 (1.09)	Increased	446 (46.60)	527 (55.06)
	Remain the same	287 (29.99)	265 (27.69)
	Decreased	224 (23.40)	165 (17.24)
PI: Remain the same EI: High Total no. 3934 (4.50)	Increased	2641 (67.13)	3066 (77.94)
	Remain the same	1147 (29.15)	729 (18.53)
	Decreased	146 (3.71)	139 (3.53)
PI: Remain the same EI: Low Total no. 1106 (1.26)	Increased	575 (51.99)	643 (58.13)
	Remain the same	431 (38.97)	289 (26.13)
	Decreased	100 (9.04)	174 (15.73)
PI: Remain the same EI: Remain the same Total no. 4517 (5.16)	Increased	2327 (51.51)	2474 (54.77)
	Remain the same	1911 (42.30)	1739 (38.50)
	Decreased	279 (6.17)	304 (6.73)

EI: prices one year from now; PI: prices compared to one year ago; percentages are mentioned in the parentheses

7. Conclusion

We conclude our study by comparing our results with those obtained from the two earlier studies by Yadav and Shankar (2014-15) and Ichiue and Nishiguchi (2015) in subsection 7.1. All these studies employed the same methodology framework and measured the real spending with the expected and perceived inflation of consumers across different time periods and inflation rate conditions.

7.1. Comparison of results

The present study examining the relevance of the Consumer Confidence Survey considered one such survey conducted by the RBI from March 2015 to December 2018. In comparison, the previous study by Yadav and Shankar (2014-15) analyzed Consumer Confidence Survey data for the period 2011–2014. The present study identified associations between inflation expectations and perceptions and their link to current and anticipated consumer spending,

which turned out to be quite different from those observed by Yadav and Shankar (2014-15). The results of our study revealed that expected real spending is likely to increase with an increase in prices one year from now. Similarly, prices compared to one year ago were also found to have a positive impact on the perceived change in current real spending. These findings do not conform with either the underlying economic understanding or with the existing studies in the Indian context. We also noted the positive influence of expected and perceived inflation on the perceived change in real spending and expected change in real spending, respectively. However, Yadav and Shankar's (2014-15) results alluded that expected real spending is more likely to decrease with an increase in prices one year from now.

Similarly, in our study, perceived inflation exerted a negative impact on the perceived change in current real spending. Furthermore, we observed the negative influence of expected change in real income and perceived change in current real income on expected and perceived change in real spending. These findings contradict those obtained by Yadav and Shankar (2014-15), except that they did not measure the impact of perceived inflation and perceived change in current real income on the expected change in real spending. Moreover, Ichiue and Nishiguchi (2015) utilized the data from the Opinion Survey conducted by the Bank of Japan, and the results indicated that as the expected (perceived) inflation increases, future real spending (real current spending) is likely to decrease. These results are again contrary to the present findings.

Additionally, the relationship between expected and perceived inflation was positive, thereby implying that low perceived inflation was followed by low expected inflation and vice versa. Finally, the expected (perceived) change in real income was likely to increase with an increase in prices one year from now (prices compared to one year ago) and vice versa, which again questions the relevance of the data because these results are not commensurate with general economic understanding. Yadav and Shankar (2014-15) and Ichiue and Nishiguchi (2015) failed to analyze these relationships. Moreover, the kind of descriptive demographic statistics and cross-tabulations of expected (perceived) inflation and nominal spending, which provided a broad perspective of the data in the present study, were not analyzed by Yadav and Shankar (2014-15) and Ichiue and Nishiguchi (2015).

If we examine the inflation rates in all three studies, the rate was the lowest (i.e., less than 1%) in the study by Ichiue and Nishiguchi (2015), which was conducted from September 2006 to 2008. The inflation was the highest during the period of study by Yadav and Shankar (2014-15), i.e., approximately 10%. However, both studies yielded similar results. On the other hand, our study analyzed the data when the inflation rate was approximately 4% on average, i.e., intermediate to the earlier two studies, and our results differed. Hence, this specific factor, i.e., inflation rate, does not draw any concrete reason for the differences in results at this time.

7.2 Implications for consumer and monetary policy

The findings of the present study have important implications for consumer welfare. For instance, the lack of knowledge on prices and inflation and lack of idea about changes in

income and spending behaviour led to unreliable survey data. The survey data on inflation expectations and perceptions exert a significant impact on the effectiveness of the monetary policy at a macro level (Woodford, 2005). As inflation targeting is the main objective of monetary policy, how the households expect and perceive inflation and incorporate them in their decision-making are pertinent for the efficacy of central banks. However, because most of the results defied our expectations, it is difficult to say whether the responses were made rationally by considering all the relevant information. As argued above, since most of the respondents hailed from low and lower-middle-income groups, we are doubtful whether they were aware of actual inflation and accordingly formed their opinions on inflation and spending. We observed a general tendency to over-report their perceptions and expectations about inflation and spending. All these factors could impact the monetary policy and, hence, consumer welfare in a big way. According to Vellekoop and Wiederholt (2019), consumers expecting high inflation tend to spend more and save less. even when the actual inflation at that time period is lower than that in the preceding year, which leads to a decline in consumer welfare. The results of the present study are also in the same direction. Overall, we deem it reasonable to question the validity of these surveys.

Based on the discussion presented above, we recommend that the surveys must target people possessing basic knowledge and awareness about prices, concepts of inflation, and the general economic environment, as well as ideas about changes in their own income and spending behaviour. The majority of the sample must not consist of respondents who are not even graduates, a substantial portion of whom are either illiterate or merely have elementary education up to the 5th grade. Overall, the demographic profiles of the respondents, along with the results of the ordered probit model, obscure the purpose of conducting such surveys. Furthermore, we suggest that a major communicative role on behalf of the central bank, RBI, should be performed periodically to educate the masses on the objectives of monetary policy, including inflation, consumption, and growth (Dräger, 2015; Szyszko and Płuciennik, 2018).

The implications and suggestions of this study are not limited only to the monetary policy of the RBI but extend to central banks' efficacy in general. As the inflation targeting regime has become the priority of the monetary policy of almost all the central banks, anchoring inflation expectations of households, firms, and professionals have become of utmost importance. To understand and anchor these expectations, the surveys need to be structured carefully to get meaningful results that can be used in policy making and increase consumer welfare. The other potential beneficiaries are the professionals and the experts who utilize these surveys to examine the inflationary trends and monetary policy credibility in the country.

Our analysis has been quite exhaustive in terms of utilizing the specific considered for analysis. Further investigations that consider similar surveys published by the RBI are needed for assessing improvements in terms of having relevant implications for policymaking.

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