

# DETERMINANTS OF PERCEIVED INFLATION IN ALGERIA: AN EMPIRICAL STUDY

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## Abstract

This study aims to assess the determinants of inflation perception in Algeria. A survey of 32 items was held online on February 2022 where respondents were questioned about their perception for the last twelve months as well as their characteristics and behaviour. Collected data has been analysed using two Probit models. The results revealed that perceived inflation is affected by socio-demographic characteristics, especially age and education degree while knowledge about inflation rate doesn't have a direct effect on it. Psychological factors also play an important role as price decrease awareness contribute to lower perceived inflation while individuals who doesn't usually buy goods tend to report lower perceived inflation too. Atypical results have been found for consumer behaviour effect, as a more intensive search on internet translates in higher inflation perception while the use of cash card contributes to lower it. Finally, economic condition also plays an important role, as individuals with a kind of financial distress are more likely to report higher perceived inflation. Thus, perceived inflation in Algeria highly differs from official statistical rates due to many factors specific to each individual.

**Keywords:** Inflation; Perception; Determinants; Probit; Survey.

## INTRODUCTION

Inflation is widely evaluated through variations of consumer price index CPI or harmonized one HCPI in the world. This index is used to measure people's welfare and life quality and thus enables it to study their prospects and decision making. However, this fact is based on rationality of economical agents, one of the basics of neo-classical theory. This rationality opposes monetary illusion of Keynes and has been questioned by many recent works (Blinder & Krueger, 2004; Blanchflower & Kelly, 2008; Vogel, Menz, & Fritsche, 2009) among others. Coibion et al. (2020) argue that households are inattentive to monetary policy actions and their inflation expectations differ highly from rational full-information values.

In fact, recent studies (D'Acunto, Hoang, & Weber, 2022) agent's economic decisions are based on their expectations rather than on actual statistical values. In the case of inflation, households are more likely to make their expectations and plan their consumption on their perception of price variations rather than announced values, which is affected by many behavioural, knowledge and socio-economic factors. Also, it has been proved that a more or less important gap exists between official inflation rates and perceived inflation around the world.

In Algeria, inflation rates have been established as a sole final goal for central bank monetary policy, contrasting with the dual aim of economic growth and inflation during the 90's. This objective has been set to 3% from 2002 to 2008 and raised to 4% since 2009 in response to inflation pressure from wage rise in 2008. Since then, official inflation rates, published by the national statistical organism ONS, have been generally under control fluctuating around the established goal besides 4 shocks in 2009, 2012, 2016 and 2021 where it reached respectively 5,7%, 8,9%, 6,4% and 7,2%.

Meanwhile, Algerian consumers complained, in standard and social media among other ways, about prices rise and the degradation of their quality of life, even when the inflation rate was under control. This behaviour became more accentuated when specific products prices increased, following the introduction of a luxury tax on exotic fruits imports for example, and generally anytime a specific alimentary good price vary, even when other products prices are stable or decrease.

This study aims to assess the determinants of inflation perception for Algerian consumer. Hence, a survey of 32 questions has been made available online between 01/02/2022 and 28/02/2022 where 220 answers have been collected. This survey includes both qualitative and quantitative questions about perceived inflation in one hand, and factors that could affect this perception in the other hand. These factors issued from literature, section 2, include socio-demographic and economic characteristics of respondent, familiarity with inflation concept and its calculation methods but also purchase and consumption habits. Collected data will, in section 3, be analysed through empirical methods, two probit models are used to assess the importance of each factor.

This paper includes an original contribution by the fact that, in one hand, Algerian population perception has never been studied before this paper, in the other hand, the survey have been adapted to Algerian reality both in questions included and prospection method. Also, this study contributes to understand a little more the factors affecting inflation perception formation of the households, subject that has not been widely explored yet by economic literature.

## LITERATURE REVIEW

Economic literature about inflation perception is relatively limited and most of times linked to inflation expectations. First papers on the subject appear in the 1980's, Jonung (1981) set perceived inflation as the major determinant of inflation expectations instead of historical values. This perception is different from an economical agent to another according to gender (Jonung, 1981). Later on Jonung and Conflitti (2008) link inflation perception to age, occupational and regional groups.

On a psychological approach, Warneryd (1986) identify two kind of factors affecting inflation perception. First, direct experience divided on four aspects. Exposure to price changes which diverge from a person to another based on bought commodities. Selective perception that enhances variation perceived on most important products. Selective memory, that gives more importance to big events, even if they are temporary. Finally, selective reporting reflecting the capacity to integrate calculations

by the consumers. In fact, individuals' knowledge about inflation also plays an important role in perceived inflation, as demonstrated by Svenson and Nilsson (1986) that compared psychology students to economics students, finding that the latter's perceived inflation is closer to statistical values.

In the same lines, Abildgren and Kuchler (2021) found that consumer's quantitative inflation perception is biased because consumers have usually another concept of inflation in mind. The authors argue that individuals, when asked about inflation variations, refer to food price variations rather than general price index variations, as food is bought on daily basis. Their result does only apply for food but not for other frequently purchased goods.

Second kind of psychological factors identified by Warneryd (1986), indirect experience from obtained information in media, peers and official institutions, this was later on assessed as social amplification mechanisms by Raynard et al. (2008) from social media and word of mouth.

Other studies, (Garling & Gamble, 2006; Gamble, 2006) among others, suggest that perceived inflation is affected by individual income and its variations compared to price changes. This factor affects individual's perception of affordability and their well-being feeling. Some authors, (Stanisławska, 2019) among others, also add that residential property, housing, prices affect inflation perception, even if this factor has got mixed efficiency in empirical studies.

Furthermore, Raynard et al. (2008) argue that inflation influence doesn't always flow from present to future, expectation, it can also flow from past to present in the case of perception. According to Traut-Mattausch et al. (2004) study, actual inflation perception can be biased by expectations that have been formed, at some point in the past, about the present values. Although, this hypothesis has been criticized by Drager (2015) based on survey data.

Finally, D'Acunto et al. (2021) show that households weight their price change according to purchase frequency rather than on expenditure share, contrasting with inflation calculated by statistical institutes based on the consumer basket.

## **EMPIRICAL ANALYSIS OF PERCEIVED INFLATION FACTORS FOR ALGERIA**

### **Method**

Inspired by methodological approach suggested by Del Giovane, Fabiani and Sabbatini (2008) a survey including 33 questions have been made available for respondents, the questions covers the determinants of perceived inflation discussed in theoretical and empirical literature. Afterward, collected data will be analysed using two probit models; first using an ordinal scale of 4 from slight increase, including the individuals that answered that prices have fallen or raised slightly, to very high increase. Second, we will analyse the characteristics of the individuals with extreme perceptions using a binary scale, where the answer prices have "highly increased" will take value of 1 while the answers that prices have "fallen" "stayed same" "slightly increased" or "moderately increased" will take value of 0.

### **Survey**

The survey used in this study is based on the one developed by Del Giovane, Fabiani and Sabbatini (2008), adjusted to adapt to the Algerian consumer specificities. The survey specified that the questions referred to the consumers' perceptions and situation in the period between February 2021 and February 2022.

The survey integrated qualitative inflation measurement as the respondents were asked to answer if the prices had "decreased" "stayed same" "risen slightly" "risen moderately" "risen a lot" and neutral answer "don't know". This question has been asked for the general prices but also for categories of commodities, based on household basket, "food and non-alcoholic beverages" "cloths and shoes" "housing and charges" "furniture and furnishings" "health and hygiene" "transport and communication" and finally "education, culture and leisure". In addition, the survey included two quantitative inflation measurement questions, one about general inflation and one specifically about food prices.

As about the determinants of perceived inflation, based on literature, 32 items have been included as a part of 5 categories, as below;

### ***Socio-demographic characteristics***

Many studies suggested the existence of differences in inflation perception based on socio-demographic characteristics of the individual (Jonung, 1981; Bryan & Venkatu, 2001; Gamble, 2006; Jonung & Conflitti, 2008). This hypothesis support the existence of difference in perception linked to gender, age and professional situation. Hence, we introduced questions related to gender, age, education level, professional status and working condition.

### ***Knowledge and understanding of inflation phenomenon***

A wrong interpretation of inflation information and statistics can lead to variation of perception of this phenomenon by economic agents as reported by (Warneryd, 1986; Svenson & Nilsson, 1986; Raynard et al., 2008). Thus, the survey include questions to evaluate if the individuals are able to understand variations of general price level, calculate correctly percentage variation of prices, know the components of consumer basket of CPI.

### ***Psychological factors***

As seen in literature, mostly (Warneryd, 1986) direct experience, two psychological factors will be assessed in this study. First a combination of exposure to price changes and selective perception, consumers are more likely to perceive variations in their more commonly purchased goods and give them more importance than other products, hence questions about good purchases have been introduced. Individuals have been asked whether they are main buyer of different kind of goods and, if yes, what durable products they purchased during the last five years

Second, selective memory, as individuals gives more importance to prices increase than decrease (Del Giovane, Fabiani, & Sabbatini, 2008; D'Acunto et al., 2021), thus a question about if any product price has decreased in the last years and which one to avoid wrong answers.

### ***Household's economic situation***

As we have seen, (Garling & Gamble, 2006; Gamble, 2006), household economic situation can influence inflation perception. Thus, the survey includes many questions to assess this situation. First, they are asked if their income is sufficient to finance current expenses, let them make some savings or if they have to complete it by either drawing on their existing saving or go into debt. Second, they are asked if they pay a rent or not and what share of revenue it takes, as the rent can draw a huge part of household income, conditioning its other expenses. Third, respondents were questioned if they have been actively engaged, in the last five years, in housing purchase or sale, independently from actual completion of the transaction.

This last question is based on the idea that housing purchase implies huge expenses, that are not necessarily included in consumption basket, that can affect inflation perception in one hand (Stanisławska, 2019). In the other hand, as suggested by Del Giovane, Fabiani, & Sabbatini (2008), when individuals are engaged in an important transaction usually collect a huge quantity of information on interest rates, actual and expected inflation, especially when it is financed by credit. Thus, these individuals have more knowledge about price evolution than those who are not engaged in this kind of transactions.

Finally, household have been asked to indicate how many individuals live in the household and how many of them earned an income, that let us know the number of economic support per household.

### ***Consumer behaviour***

Consumer purchase habits can have an impact on perceived inflation. According to Del Giovane, Fabiani, & Sabbatini (2008) individuals with more sophisticated purchase practice are likely to report more accurate price changes especially as they have a better vision about relative prices.

Thus, questions about how many retailers are visited by the individual before making his purchase, the intensity of use of internet to get information about the product and the frequency of cash card use have been introduced.

### **Sample**

Simple random sampling was chosen using the probabilistic technique. This technique implies a real random draw as each individual of the general population has a chance to be selected. The survey has been made available online, this channel seems the most accurate according to Gueguen & Yami (2013) as it enables to override postal administration channel difficulties. The online survey has been made using Google Forms that enables, as other online survey tools, to share it through a public web url address and gather answers data in Google Drive as a spreadsheet. To adapt the survey to Algerian consumer culture, two versions have been made with similar questions; one in Arabic and a second one in French.

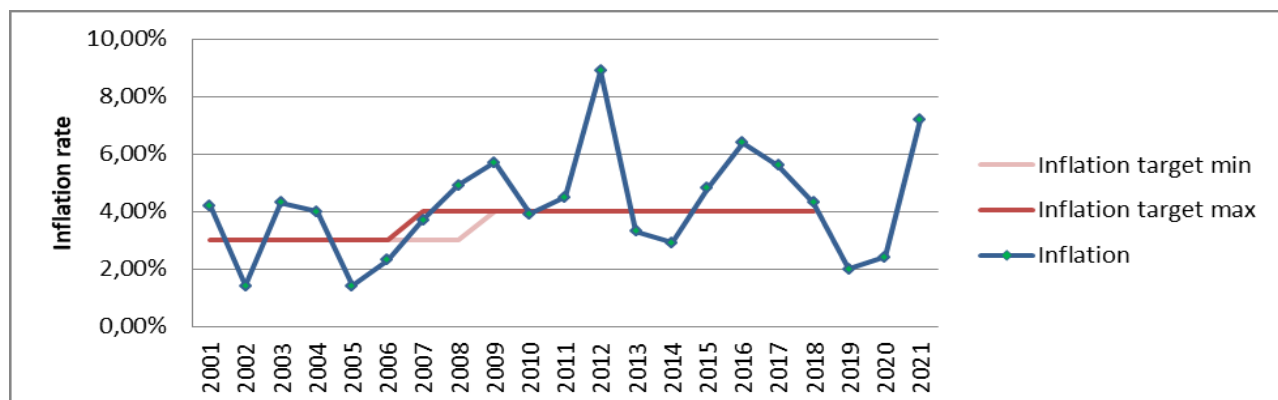
The survey has been made available online for Algerian consumers through social media, specifically in Facebook pages, between February 01, 2022 and February 28, 2022. A total of 228 answers have been received, from which 8 have been eliminated as they included too many missing data, leading to a sample of 220 individuals.

Gender distribution indicates that 75% of respondents are women while the most represented age range is between 26-35 years with 35,9% followed by the range between 36-45 years with 23,2% while the respondents between 18-25 years and 46-60 years are at about 12%, finally the individuals with more than 60 years are the less represented with 5,9%. This sample component is adequate with target population in this study and sociology of Algerians, as women are, generally more involved in purchases, especially food, while the young age category have low to no income, most still students or unemployed, same goes for old individuals that have, in some cases, their purchases done by other persons, mostly close family.

As for professional situation, 44,1% are permanent employees, 6,4% work part-time, and 17,3% are self-employed. Furthermore, 9,6% are students, 5% are retired, 6,8% are unemployed, and 8,6% are housewives. Most respondents are highly educated; 46,4% have a university degree, 42,7% a secondary degree.

### **Statistical Inflation versus Perceived Inflation in Algeria**

Since the beginning of 2001 the, central Bank of Algeria has set a quantitative target for annual inflation, 3% from 2001 to 2006, between 3% and 4% in 2007 and 2008 then 4% since 2009 until 2018, last year where a quantitative target has been announced by central bank.



Source: authors based on Bank of Algeria data

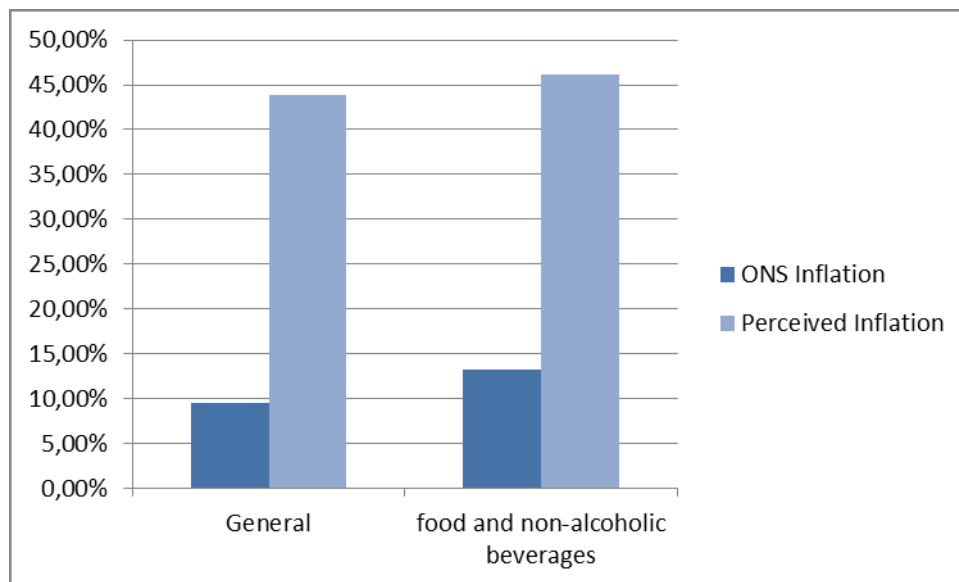
**Figure 1.** Evolution of inflation in Algeria (2001-2021)

In this two decades inflation has been generally under control, as we can see in the figure, besides 4 years corresponding to strong shocks; 5,7% in 2009 following a huge raise in salaries, 8,9% in 2012 following another raise in salaries, 6,4% in 2016 corresponding to government deficit



difficulties and an introduction of unconventional monetary policy and finally 7,2% in 2021 corresponding to Covid-19 effects on the economy.

Even if official inflation, reported by official institutions, has “only” been around 7,2% in 2021, Algeria citizens complained about huge raises in written, audio-visual and social media alongside word to mouth about commodities prices that, according to them, doubled in some cases. Thus we compare in the next figure between the official inflation, announced by the national organism of statistics ONS, and the quantitative perceived inflation, gathered through our survey, both for the annual change between February 2021 and February 2022.



Source: Authors, based on survey and ONS data

**Figure 2.** Official Inflation Vs Perceived Inflation (February 2022)

First, we can notice a huge difference between perceived and statistical inflation, both in the general index and specifically for food. For general inflation, the value reported by ONS is 9,54%, while the one perceived by customers in the survey is, on average, 43,93%. The answers of the sample ranged from 1% to 150%, representing many extreme values.

The same observation can be made for food price variations where the value reported by the ONS is 13,21% while the one reported by customers in the survey is, on average, 46,15%. However, the range of this one is larger than the general index; it ranges from 2% to 200%, translating into more extreme values than general prices. However, we can observe that both in the official inflation rate and the perceived one, food price variations are higher than the general prices by about 3%.

The same findings have been done by Del Giovane, Fabiani and Sabbatini (2008) as they found a perceived inflation of 17.7% while CPI inflation was at 1,9% in Italia or Hayo and Neumeier (2018) for New Zealand where perceived inflation was about 1%, excluding extreme values going up to 70%, while official inflation was at 0,3% or Gündüz, Yildirim and Durukan (2020) with perceived inflation of 41,4% while official inflation was at 10,85% in Turkey.

### **Empirical specification**

As used in most studies on perceived inflation, we use the qualitative ordinal scale. Hence, the ordered probit model used by Del Giovane, Fabiani and Sabbatini (2008) seems adequate to assess perceived inflation determinants in Algeria. Although, some adjustments were necessary in independent variables to meet Algerian situation.

The general form of the model is as follow:

$$P(y_j = x) = F(b_1 z_{1j} + b_2 z_{2j} + \dots + b_m z_{mj})$$

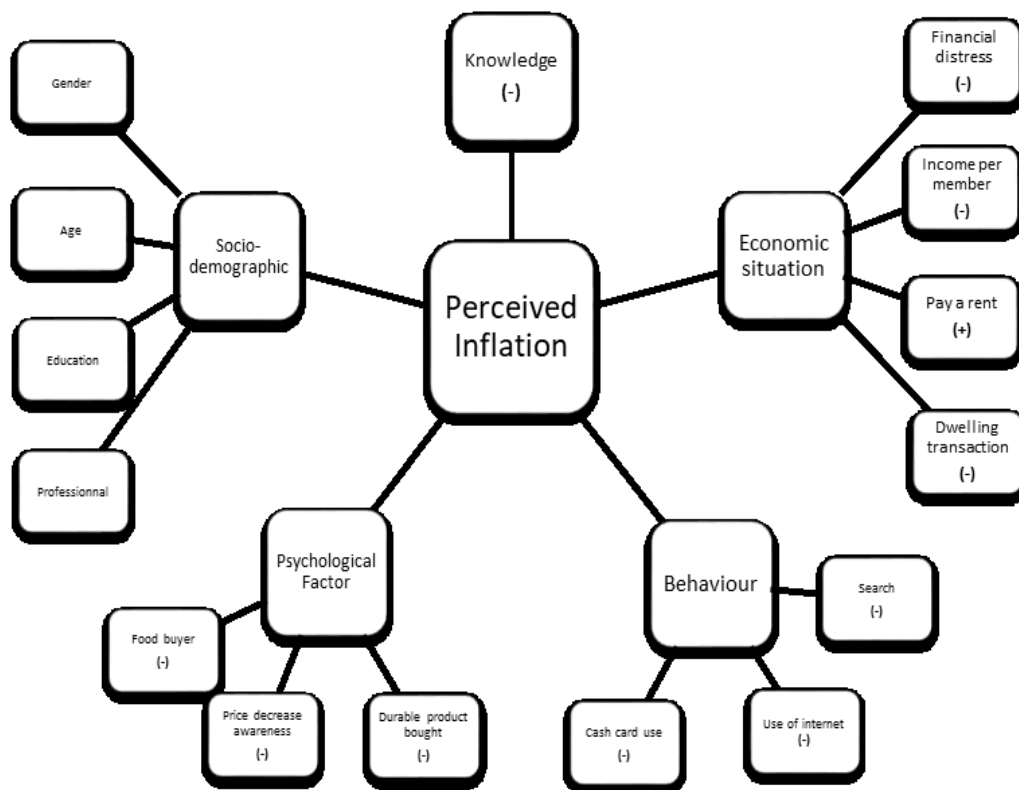
F being the cumulative function of the normal distribution,  $y_j$  dependant variable taking values of 1 for "slight inflation", 2 for "moderate increase" and 3 for "high increase". There are no values for the two other answers in the survey "stayed the same" and "decreased" as none of them have been reported in received answers. Although for good prices we consider the value 1 for "stayed the same" and "decreased" up to 4 for "high increase".

$P(y_j = x)$  represent the probability that the individual  $j$  perceived inflation is equal to  $x$  ( $x=1,2,3$ ) for general prices or ( $x=1,2,3,4$ ) for food prices.  $z_{ij}$  denotes a set of  $m$  characteristics of the individual  $j$  that determine his perceived inflation.

For independent variables, we use the factors discussed in the methodological section as follow:

- Knowledge factor that is represented by a single dummy variable "knowledge" that takes a value of 1 if the individual understand inflation and its calculation, 0 otherwise. A value of 1 has been given to individuals with 2 correct answers out of the 3 knowledge questions.
- Psychological factor consisting of three variables; two dummy variables are used to assess the type and frequency of some product purchases, first one "food buyer" takes value 1 if the individual is the person who usually buys food product in the household, 0 otherwise. Second one "durable product bought" takes values from 0 to 3 depending on how many of the three durable products, mobile, laptop and/or TV & electronics have been bought in the last five years. The third variable "price decrease awareness" evaluate if the individual is aware of both prices increase and decrease, taking value of 1 if individual reported a price decrease in any product, 0 otherwise.
- Behaviour factor represented by three variables. First one "search" evaluate the intensity of research before buying a durable product, it takes the value of 1 if individual visit more than three retailers, 0 otherwise. The second variable, "use of the internet," corresponds to the frequency on which the internet is used by the individual to be informed on the product he projects to buy; it takes the value of 1 if he uses "often" and 0 otherwise. The last variable in this factor is "cash card use" corresponding to the use of electronic mean of payment, it takes value of 0 if the individual never use it and 1 otherwise.
- Economic condition represented by four variables. First, the "financial distress" variable refers to the capacity of the household to cover its expenditures without the need to take from its savings or go into debt. It takes the value of 0 if the individual "must draw from his savings" or "must incur debt" and 1 otherwise. The second, "income per member," measures the number of household members that have an income; it takes the value of 1 if more than 2/3 of members of the household earn a revenue, and 0 if there is less. Third, the "pay a rent" variable assesses if the respondent pays rent for the house where he lives; it takes the value of 1 if he pays more than 30% of his income for the rent and 0 otherwise. Finally, the "dwelling transaction" variable takes the value of 1 if the individual has been involved in buying or selling a dwelling in the last five years, even if the operation has not been concluded, and 0 otherwise.
- Socio-demographic characteristics consisting on gender, age, education degree, working condition and professional category.

The expected effects according to literature review are represented in the next figure:



Source: authors, based on literature

**Figure 3.** Model representation

Survey data gathered has been processed using Microsoft Excel V14.0 to make the variables, then analysed using IBM SPSS V26.0. The results obtained are discussed in the next section.

## Results

Four models have been evaluated, two with general prices and two others with food prices, although the ones using food prices failed robustness tests and thus have been eliminated from the following analysis. The model 1 has perceived variations on general prices using a likert scale from 1, slight increase, to 3, high increase, while the model 2 use a binary scale where 0 is slight or moderate increase and 1 is high increase. The results of the two probit models are as follow:

**Table 1**  
Model's fit

	Model 1	Model 2
Chi-square	61,745	57,799
Significance	0,009*	0,021*
Pearson		
- Chi-square	246,786	151,822
- Significance	1,000*	0,838*
Deviance		
- Chi-square	158,458	124,517
- Significance	1,000*	0,996*
Cox & Snell	0,256	0,242
Nagelkerke	0,393	0,415
McFadden	0,280	0,317

Source; authors using SPSS V26.0



First, we test the null hypothesis for the two models; H0 in probit models is that the model without predictors is as good as with the predictors. As we can see in table 1 below, the null hypothesis is rejected in the two models as significance of the chi-square is equal to 0,009 for model 1 and 0,021 for model 2, both inferior to 0,05. Thus, model with predictor is better than without them.

Second, goodness-of-fit test through Pearson and Deviance statistics that compares between observed and expected values, where the null hypothesis is that the model fits, thus significance must be large to accept the null hypothesis that model fits well. Both models have very high significance, 1.00 for model 1 and 0,838 for model 2 in Pearson statistics and 1.00 for model 1 and 0,996 in Deviance statistics. All values being high we accept the null hypothesis H0 that the two models fit.

Finally, we evaluate the strength of the association between the dependant variable and the predictors using the pseudo R2 statistics, theses ones are used as an alternate to R2, used in OLS models, although their values are usually low. Thus, McFadden (1979) study usually referred to for ordinal regressions, suggested that a value between 0,2 and 0,4 for his statistics correspond to an excellent model fit. Other statistics usually used in probits are (Cox & Snell, 1970) statistics and more recently (Nagelkerke, 1991) statistics. All the considered statistics have values superior to 0,2 demonstrating a strong association between the dependant variable and its predictors.

After evaluating the robustness of the models, individual coefficients for the independent variables are considered.

**Table 2**  
Probit coefficients

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>
	<i>Coefficient (significance)</i>	<i>Coefficient (significance)</i>
Knowledge=0	0,398 (0,215)	0,442 (0,199)
Knowledge=1	0a	0a
Price DecreaseAwareness = 0	1,749* (0,000)	1,827* (0,000)
Price DecreaseAwareness = 1	0a	0a
FoodBuyer=0	-0,558** (0,069)	-0,267 (0,415)
FoodBuyer=1	0a	0a
Durableproductbought=0	6,610 (0,996)	6,382 (0,997)
Durableproductbought=1	-0,657 (0,106)	-0,765** (0,086)
Durableproductbought=2	-0,562 (0,112)	-0,637 (0,106)
Durableproductbought=3	0a	0a
Search=0	0,253 (0,372)	0,174 (0,564)
Search=1	0a	0a
Useofinternet=0	-0,718* (0,025)	-0,444 (0,191)
Useofinternet= 1	0a	0a
CashCardUse=0	0,515** (0,069)	0,493** (0,097)
CashCardUse=1	0a	0a
Financialdistress=0	0,558** (0,073)	0,587** (0,069)
Financialdistress=1	0a	0a
Paysarent=0	0,635** (0,083)	0,653** (0,088)
Paysarent=1	0a	0a

Incomepermember=0	-0,401 (0,184)	-0,460 (0,152)
Incomepermember=1	0a	0a
Dwellingtransaction=0	-0,530 (0,124)	-0,423 (0,230)
Dwellingtransaction=1	0a	0a

\* Significantat 5%

\*\* Significantat 10%

Source; authors using SPSS V26.0

We start with the interpretation of the factors. First, knowledge factor has no significant impact on perceived inflation in the two models tested. This result diverges from other studies (Svenson & Nilsson, 1986; Raynard & Al., 2008; Hayo & Neumeier, 2018) but is accurate with empirical results of Del Giovane, Fabiani, & Sabbatini (2008) for Italia or Gündüz, Yildirim, & Durukan (2020) for Turkey. To note that very few surveyed individuals in Algeria, 20%, have good knowledge of inflation and understanding of prices variations.

As about psychological factors, results demonstrate that individuals that don't buy food often are more likely to report lesser perceived inflation, negative significant coefficient in Model 1. Moreover, for durable products bought by respondent, the coefficient is insignificant besides in the Model 2 where the individuals that bought 1 product only, negative significant coefficient, are more likely to report lesser values for perceived inflation. These results contrasts with expected effects (Warneryd, 1986; D'Acunto & Al., 2021) but can be explained by the fact that individuals that doesn't purchase products often do not face price variations and thus are not affected by frequent price variation like in the case of food products in Algeria among other countries, while durable product are bough less frequently meaning consumer usually compare to old prices for purchases done years ago (Gündüz, Yildirim, & Durukan, 2020).

Finally, as expected, being aware of price decrease in some product translate in lower perceived inflation, positive significant coefficient in both models. This econometric result has been confirmed by Del Giovane, Fabiani, & Sabbatini (2008), albeit only descriptively.

Regarding behaviour factor, we can see that search activity, visiting multiple retailers before buying, doesn't have a significant effect on perceived inflation in none of the two considered models, these results are similar to other studies (Del Giovane, Fabiani, & Sabbatini, 2008; Gündüz, Yildirim, & Durukan, 2020). Paradoxically, the individuals that doesn't use internet "often" for their research activity and purchases are more likely to report lower perceived inflation, coefficient -0,71 ( $p=0,02$ ) in model 1, while not using cash card lead to a higher perception of inflation, coefficient 0,51 ( $p=0,06$ ). The effect of internet use is opposite to the one suggested by literature (Warneryd, 1986; Raynard & Al., 2008) as a more intensive information gathering lead to a more accurate perception, in the case of this study lower, while the cash card use have the expected effect.

Concerning financial distress, households that have a bad financial situation, must draw from savings or go into debt to meet monthly expenditures, are more likely to have a higher perceived inflation, coefficient 0,55 ( $p=0,07$ ) in model 1 and coefficient 0,58 ( $p=0,06$ ) in model 2. This result is accurate with expected effects and is similar to other studies (Del Giovane, Fabiani, & Sabbatini, 2008; Gündüz, Yildirim, & Durukan, 2020) findings. Paradoxically, households that don't pay a rent or pay low rent, less 30% of their income, are more likely to perceive higher inflation, coefficient 0,63 ( $p=0,08$ ) in model 1 and coefficient 0,65 ( $p=0,08$ ) in model 2. This result is opposed to expected effects and is atypical for Algerian case.

The two other variables in financial distress factor, number of household members that have an income and if individual have been involved in a dwelling transaction, both have no significant effect, econometrically.

As about socio-demographic characteristics very few variables are significant. Female coefficient is positive in both models albeit not significant, but descriptive statistics show that 85% female individuals have very high perceived inflation against 77% for male individuals meaning than women are more likely to report a higher inflation, similar result have been found in most studies with little empirical evidence (Gündüz, Yildirim, & Durukan, 2020). While for age we can see in both

models, coefficient equal to -2,05 for model 1 and -2,39 for model 2, that individuals between 18 and 25 years old have lower perceived inflation. This result is found in many studies (Del Giovane, Fabiani, & Sabbatini, 2008; Malmendier & Nagel, 2016) and can be explained by the fact that this age category has usually no/low income, mostly students, and rarely participate in household expenses (Hayo & Neumeier, 2018).

Another interesting result is that individuals with higher education degree have lower perceived inflation. This result can be explained by the fact that this category of individuals have better understanding and more reasonable perception of inflation, avoiding extreme values as reported by many individuals. Furthermore, no significant effects have been found for professional status or working condition of the individuals.

## **CONCLUSION**

This paper aimed to assess the determinants of perceived inflation in Algeria, as many consumers complained about prices rise in standard and social media reporting very high values, 44% on average, compared to official inflation rate calculated by the national organism of statistics ONS, less than 10%. Thus a survey has been made available online on February 2022 where individuals have been asked about prices variation over last twelve months.

Five kinds of factors have been identified from literature review. Socio-demographic characteristics, knowledge about inflation, psychological factor, consumer behaviour and economic situation. Questions about each factor have been introduced in the survey, from which dummy have been made according to a rating method.

Data analysis using probit models show that, similar to other countries, knowledge about inflation doesn't have any effect on perceived inflation while few surveyed individuals have an acceptable knowledge about inflation rate and its calculation. Findings show that individuals who don't buy goods often, both food and durable products have a lesser perceived inflation as they don't have a direct exposure to prices variation. Logically, price decrease awareness translates in lower perceived inflation confirming a more rational behaviour.

Atypically, a more intensive use of internet for information gathering and purchases lead to higher perceived inflation, opposite to literature expectations, but could be explained by the abundance of false information about prices in social media. While, cash card users are more likely to have a lower perceived inflation, most likely, in the case of Algeria where it is not widely used, because these individuals have a better financial situation. Furthermore, empirical study confirms that financial distress results in higher perceived inflation as this population category is more affected by prices variation.

Finally, socio-demographic characteristics have divergent results. No empirical evidence have been found for gender effect, even if it is shown in descriptive analysis, while lower age category have lesser values for perceived inflation as they rarely contribute to household expenditures, mostly students. An important result is that a higher education degree contributes to decrease perceived inflation, as those individuals tend to have a more rational perception of prices variation, while professional status and working conditions have no effects.

As a whole, study results confirm that, in the case of Algeria, perceived inflation is not always rational. It differs for each individual according to his socio-demographic characteristics, knowledge, behaviour, economic condition and psychological status. Unfortunately, unlike most developed countries, central Bank of Algeria didn't give any interest to this indicator, even if it well know that more information about inflation and higher central bank credibility could reduce the gap between the official statistical inflation rate and perceived one.

## **Research ethic statement**

The authors declare that this study is not submitted for evaluation in another journal simultaneously with the CBR or previously published in another journal.

### Author contribution statement

The authors contributed equally to the paper.

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### Disclosure statement

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