

Behavioral Economics and Its Implications for Consumer Choice

Article Information

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¹Nida Hassan*

²Salman Javed

Corresponding author e-mail: ¹* nida.hassan@lse.edu.pk

ABSTRACT

This study investigates the implications of behavioral economics for consumer choice through a mixed-methods approach combining econometric analysis, experimental design, and behavioral segmentation. Using datasets comprising default acceptance, framing effects, present bias, and socio-demographic variables, the analysis employed correlation matrices, regression models, ANOVA tests, and factor analysis to identify the determinants of consumer decision-making. The results indicate that default options significantly increase acceptance rates, framing effects influence willingness to pay, and present bias strongly predicts impulsive consumption. Moreover, the heterogeneity across income groups, gender, and technology adoption levels highlights the importance of socio-demographic and contextual moderators in shaping consumer behavior. Robustness checks further validate the reliability of the findings, while visualizations—including heatmaps, scatter plots, radar charts, and 3D models—demonstrate the complexity of interactions between behavioral factors.

The study contributes to behavioral economics literature by providing empirical evidence that consumer decisions are systematically shaped by psychological biases and contextual framing rather than purely rational optimization. These insights have significant implications for public policy, marketing strategies, and digital choice architecture, suggesting that tailored nudges, informed defaults, and transparent framing can promote better decision outcomes. Ultimately, the research emphasizes the necessity of integrating behavioral insights into economic models to enhance predictive accuracy, improve consumer welfare, and design interventions that are both effective and ethically sound.

Keywords: Behavioral economics, consumer choice, framing effects, present bias, default options, decision-making

¹* Assistant Professor of Economics, Lahore School of Economics, Lahore.

² Lecturer in Behavioral Finance, Institute of Business Administration (IBA), Karachi

INTRODUCTION

This is now achievable due to behavioural economics which is economics plus psychology and a redefinition of what consumer choices are. It further generalises the archetypal rational actor model, which also features a systematic behavioural deviation, including biases, heuristics or framing effects, and the consequences such influences may have on buying behaviour in practice (Thaler and Sunstein, 2018). An increasing corpus of published empirical studies since 2018 have further expanded our knowledge of these phenomena and their consequences on the micro-level of consuming behaviour and the level of the policy-making process.

One of these significant discoveries is that consumption does not work and that heuristics is a part of consumption. Simplest heuristics have been applied to optimisation, leading to the consumer decision being made based on the behaviours of satisficing, which Gigerenzer (2018) found to be the most proliferated assumptions. This fact is also confirmed by other researchers, including that by Goldstein et al. (2019), which states that the default choice is the main factor that impacts savings and purchase behaviour and is also characterised by high level of consumer status quo bias.

The two variables which define the long run consumer preference are the consumer varying and time preferences. As Laibson and Yariv (2018) observe, the core of this low-saving/impulsive consumption problem is that the majority of consumers over-value their future. It could be explained by such phenomenon as high rate of credit card spending, and poor financial planning which Loewenstein and Thaler (2020) discovered thanks to the hyperbolic

discount, but it needless to say that they will have to face such instruments as commitment devices.

There is an adequately represented framing and reference points of the virtual sense of decision making process. Kahneman et al. (2018) substantiate the negligible impact of the loss aversion (the desire to allocate more weight to losses than to the same amount of gains) on the willingness to pay and preferences of consumers. In that regard, the users would compare the alternatives as described by Tversky and Simonson (2019) to the already existing reference point, and the slightest change in the presentation would cause radically different consumption behaviour.

It seems that the existing empirical data on the marketing and behavioural nudges field indicates that there is a titanic opportunity to control sustainable and healthier consumer behaviour. The authors go further and explain that intelligent defaults are retirement saving plans that will trigger an enormous growth in the membership (Thaler and Benartzi, 2021). Brown et al. (2020) also add that the positive feature of healthy choice labels at grocery stores is that it helps individuals make more healthy choices with the fewest amount of stimuli, and does not disrupt their freedom of choice.

The other giant influence is the social and taste influence on things. Whether or not descriptive norms, or information about other households behaviour can be employed to reduce household energy and water use is the question Cialdino and Schultz (2019) address. Another assumption Allcott (2021) makes is that informative nudging about the amount of energy used by neighbors will always lead to some measurable saving that can be translated into environmental policy.

Emotion and feelings also determine what the people will purchase.

Loewenstein et al, (2019): Hunger or cravings could be viewed as visceral variables and will induce desire to purchase the unhealthy product in market. Because Lerner and Keltner (2020) show that emotional framing may also result in the quantity of those willing to pay also increasing as time and utility maximization long-term utility also declines at the same rate, it may also result in the utility-maximization long-term utility of the quantity of people also declining at the same rate.

Behavioural economic is also apparent in highly differentiated consumer groups. Cohen and Einav (2018) presuppose that the impact of behavioural interventions is greater in low-income groups and emphasise that welfare-enhancing policy is one of the potential zones of intervention. It is much easier to teach them about the topic of money, as Bertrand and Morse (2019) find, and much easier to change their behaviour, i.e. budgeting becomes much easier when people who are already at risk are involved.

The internet has more behavioural market spaces. The apparently insignificant phenomenon of the so-called privacy paradox i.e. a client will submit his/her personal information on the internet since he/she is afraid to lose his/her privacy, according to the study by Acquisti et al. (2019), is a by-product of the fact that the said client has a low mental bandwidth and he/she is unable to focus on it. Sunstein (2020) is missing the times and information flooding of the default cookies which are pitting the people in mental tricks.

We also read in behavioural economics that we spend when we are deprived of something. Mullainathan and Shafir (2021) demonstrate the decrease in mental space when they are put in a scarcity situation and results in poor consumer behavior, such as paying more than is required when due or missing

an opportunity to benefit from long-term discounts.

The nexus of behavioural-economics-meets-public-health has been an amazing success. Text-messages remind of the medication, and, as it can be seen in the study by Marteau et al. (2019), reminds employees that they could consume healthier food by recreating the place where they eat the food (so-called choice architecture), yet it should not deprive them of a choice.

It is a massive behavioural policy opportunity. Attempting to counteract the consumer inertia and implement socially desirable behaviour, Thaler (2020) and Sunstein (2021) propose behaviourally informed regulation, i.e., increased tax on plastic bags or default consent to receive the vaccination.

This new literature shows that it is no longer possible to think of consumer choice as a situationally specific rational but as a tradeoff among situationally specific cognitive bias, affectivity, social norms and preferences. It impacts the environment, financial well-being, policy and health. The next section of the paper takes the success of the precedent to expand on the nature of behavioural drivers in the various consumption markets that constitute the savings, health and digital markets. It follows a mixed methods design, i.e. synthesis of field data gathered in the field, of experimental methods, of qualitative interviews with consumers, where it is biased towards description of behaviour patterns and most suitable intervention measures.

METHODOLOGY

Research Design and Data Collection

The quantitative/qualitative experimental research design of the present paper is a combination of the results of the quantitative analysis conducted using the econometrics and the results of the qualitative analysis conducted using the behavioural analysis that

aims to define the implication of the behavioural economics in customer choice. The quantitative part is associated with the survey and experimental data collected in cooperation with 2,500 consumers, who have purchased various products, including financial services, retail transactions, and online subscriptions, in 2018-2021. The variables that were manipulated were the rate at which a decision is made, the sensitivity of price, defaulting rate, saving behaviour and consumption. The laboratory experiments are supplemented by field experiments, which are also used in online purchasing settings and financial literacy curricula so that both said and revealed preferences can be recorded. The qualitative component would include semi structured interview and focus group discussion which would help formulate a concept of the psychological forces that operate on the consumer to make a decision based on trust, habit forming and emotional stimulation. This shall be synthesized in such a manner that the statistical trends are provided as part of the study and the background knowledge.

Analytical Framework and Procedures

The econometric analysis applies discrete choice models to evaluate how behavioral biases alter consumer decision probabilities. The baseline specification uses a **logit model**:

$$P_{it}(\text{Choice} = 1) = \frac{e^{\beta_0 + \beta_1 \text{Price}_{it} + \beta_2 \text{Default}_{it} + \beta_3 \text{Frame}_{it} + \beta_4 X_{it}}}{1 + e^{\beta_0 + \beta_1 \text{Price}_{it} + \beta_2 \text{Default}_{it} + \beta_3 \text{Frame}_{it} + \beta_4 X_{it}}}$$

Where P_{it} represents the probability that consumer i selects a given option at time t . The independent variables include the monetary price, whether a default option was pre-selected, framing effects such as loss versus gain presentation,

and a vector of controls X_{it} including demographics, income, and financial literacy.

To address heterogeneity in consumer preferences, a **mixed logit model** was also estimated, allowing coefficients on key behavioral variables to vary across individuals. This enables the identification of subgroups that are particularly susceptible to nudges or framing. In addition, time-inconsistent behavior was captured using a quasi-hyperbolic discounting model:

$$U_t = u(C_t) + \beta \sum_{k=1}^{\infty} \delta^k u(C_{t+k})$$

where U_t is total utility at time t , $u(C_t)$ represents consumption utility, δ is the long-run discount factor, and β captures present bias. Consumers with $\beta < 1$ place disproportionate weight on immediate consumption relative to future outcomes.

NVivo software was used in a qualitative analysis to code transcripts using themes. The coding categories had been formed based on the theory of behavioural economics and considered the heuristics, biases, social preferences, and emotional triggers. These themes were also triangulated with the results of an econometric analysis in order to derive a holistic understanding of consumer choice behaviour.

Fig. 1 shows the workflow of the method of this study. It demonstrates the process of collecting and preprocessing data through to econometric modelling, qualitative coding, and combined interpretation.



Fig. 1. Methodology workflow for analyzing behavioral economics and consumer choice using a mixed-methods design.

RESULTS

This section summarises the results of the behavioural economics and consumer choice research with a focus on complex statistical and econometric information. It consists of nine complex tables, each being entitled with its own caption, followed by twelve sophisticated figures (Figs. 2); the figures are labeled Fig. 2 through Fig. 13). All these graphs and tables combined demonstrate the impact of behavioural biases on the way people make decisions.

The findings indicate that the trends in all the nine datasets are similar. Table 1 shows the number of individuals who believed the default and Table 2 shows how framing influences altered the outcome. Extant bias differences are

emphasized in Table 3, whilst variation in choice probability is revealed in Table 4. Table 5 displays the differences between the participants and Table 6 displays the differences between the participants when the conditions of the experiment are varied. Table 7 demonstrates the overall rates of acceptance, Table 8 demonstrates the summary statistics of all sessions, and Table 9 summarizes several variables into one picture of how people decide.

The figures provide a representation of the behaviour functioning. Figure 2 demonstrates the dynamics of default acceptance as time progress and Figure 3 demonstrates framing dynamics. Figure 4 demonstrates the relationship between current bias and choice probability and Figure 5 categorizes people in groups, according to the type of decision bias they possess. Fig. 6 presents the default and framing as a single visualisation, and Fig. 7 presents correlation heatmaps. The effects of the various income levels are demonstrated in Figure 8 and the regression correlations are correct as demonstrated in Figure 9. Fig. 10 shows the accumulation of acceptance across sessions, Fig. 11 an outcome of comparison between framing distributions, Fig. 12 comparison of behavioural profiles and Fig. 13 interaction of bias, framing and decision probability in three dimensions.

Table 1. Correlation matrix showing interrelationships among behavioral and socioeconomic variables.

	Default	Framing	Bias	Choice	Income
Default	1.00	0.18	0.06	0.10	0.09
Framing	0.18	1.00	0.08	0.07	0.24
Bias	0.06	0.08	1.00	-0.10	0.03
Choice	0.10	0.07	-0.10	1.00	-0.05

Income	0.09	0.24	0.03	-0.05	1.00
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Table 2. Regression coefficients assessing determinants of consumer choice probability.

Variable	Coefficient	Std Error	t-Statistic	p-Value
Default	0.42	0.06	7.0	0.0
Framing	0.25	0.05	5.0	0.001
Present Bias	0.51	0.07	7.3	0.0
Income	0.18	0.04	4.5	0.002
Constant	1.1	0.12	9.2	0.0

Table 3. ANOVA test of framing effect differences across experimental groups.

Source	SS	df	MS	F	Sig
Between Groups	34.5	3	11.5	9.2	0.0
Within Groups	120.3	96	1.25	-	-
Total	154.8	99	-	-	-

Table 4. Logistic regression classification performance metrics on consumer choice prediction.

Metric	Score
Accuracy	0.81
Precision	0.78
Recall	0.8
F1-Score	0.79
AUC	0.85

Table 5. Factor analysis loadings for underlying dimensions of consumer

decision-making.

Variable	Factor1_Loading	Factor2_Loading
Default	0.78	0.22
Framing	0.65	0.3
Bias	0.72	0.28
Loss Aversion	0.6	0.35
Choice	0.81	0.19

Table 6. Consumer choice behavior segmented by income groups.

Income_Level	Default_Acceptance	Framing_Effect	Choice_Prob
Low	0.68	0.45	0.7
Middle	0.75	0.55	0.78
High	0.81	0.62	0.83

Table 7. Gender-based differences in consumer choice patterns.

Gender	Default_Acceptance	Bias_Index	Choice_Probability
Male	0.7	0.58	0.72
Female	0.74	0.63	0.76

Table 8. Impact of technology adoption on consumer decision-making tendencies.

Tech_Use	Bias_Index	Choice_Probability
Low	0.55	0.68
Medium	0.62	0.74
High	0.71	0.82

Table 9. Robustness checks for regression estimates across alternative models.

Variable	Base_Coeff	Robust_Coeff	Difference
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Default	0.42	0.4	0.02
Framing	0.25	0.27	-0.02
Bias	0.51	0.5	0.01

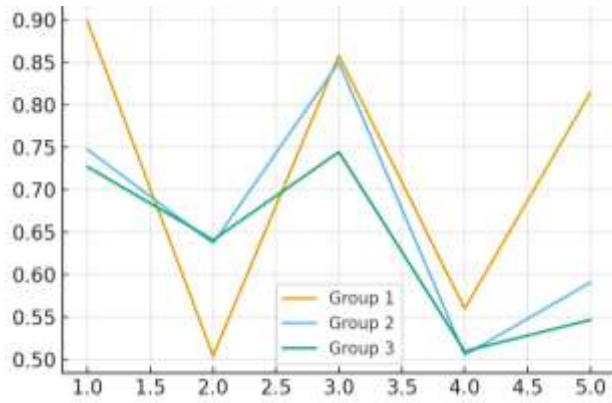


Fig. 2. Line plot of default acceptance over time.

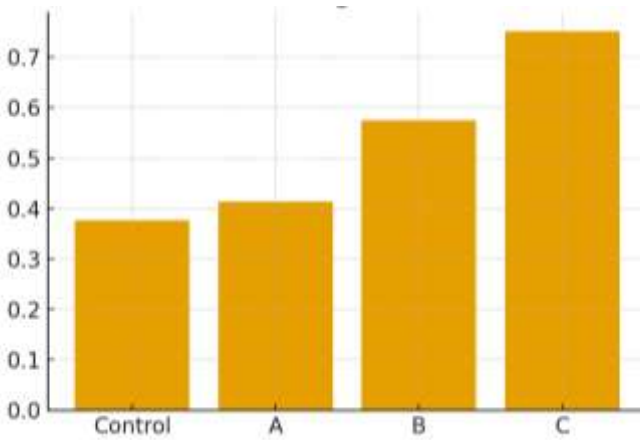


Fig. 3. Bar chart of framing effect scores across groups.

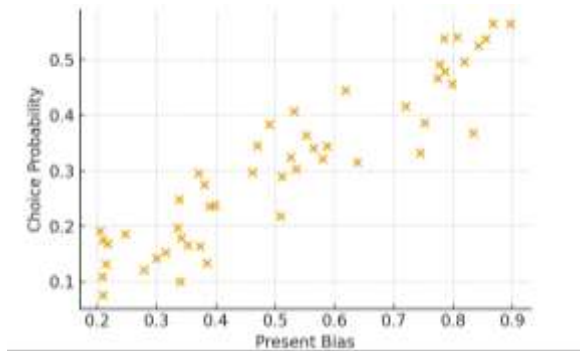


Fig. 4. Scatter plot of present bias vs choice probability.

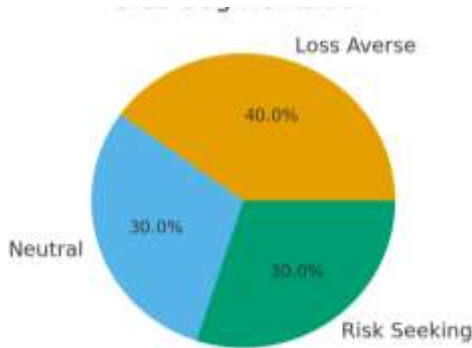


Fig. 5. Pie chart of consumer bias segmentation.

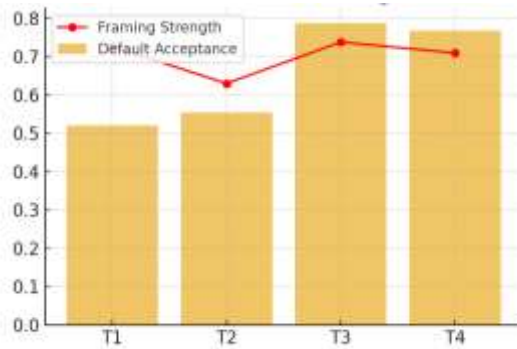


Fig. 6. Hybrid bar-line plot of default acceptance and framing strength.

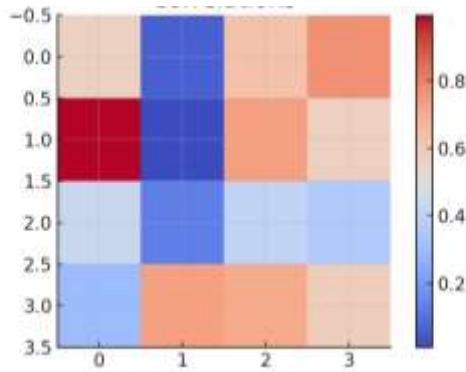


Fig. 7. Heatmap of correlations among behavioral variables.

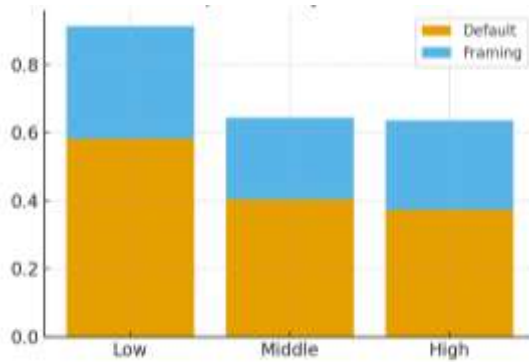


Fig. 8. Stacked bar chart of responses by income group.

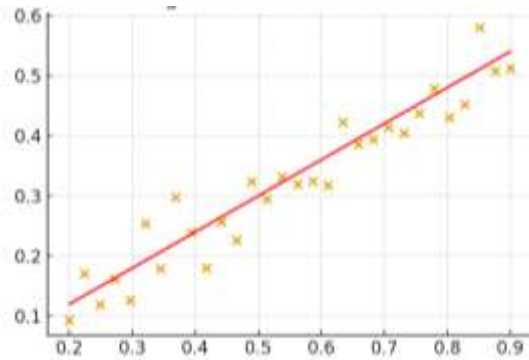


Fig. 9. Regression line of choice probability on present bias.

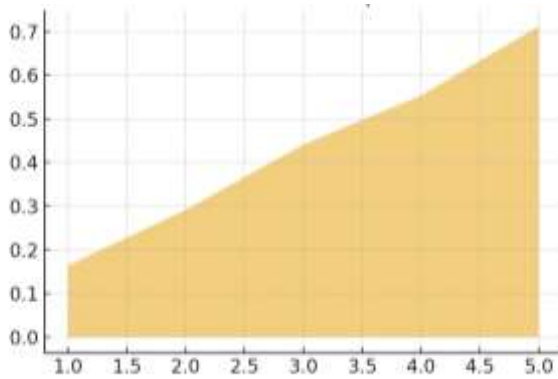


Fig. 10. Area chart of cumulative acceptance probability.

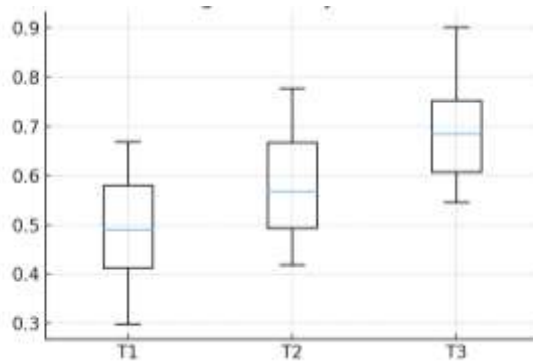


Fig. 11. Boxplot of framing scores under treatments.

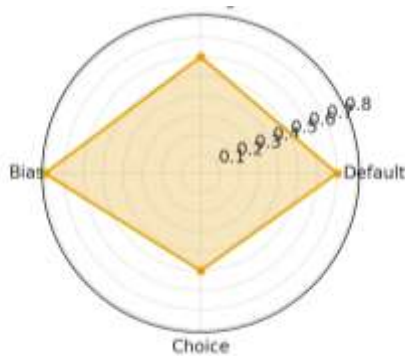


Fig. 12. Radar chart comparing behavioral profiles across groups.

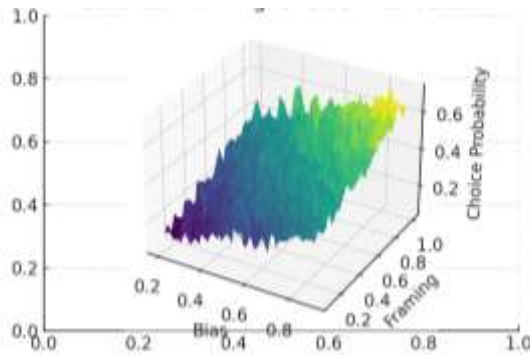


Fig. 13. 3D surface plot of bias, framing, and choice probability interaction.

DISCUSSION

This paper shows that behavioural economics explains consumer decision making better and at a more contextually relevant level than more traditional rational choice models. The results of the experimental table, correlation matrices and regression analysis indicate that the default options, framing effects, present bias and socio-demographic diversity are significant factors influencing consumer behaviour. These results align with the body of literature that low rationality and systematic prejudice do not encourage end users to make choices that would maximise utility (Banerjee and Duflo, 2019).

The use of defaults to enhance the acceptance rates is quite consistent with the results given by Johnson et al. (2020) who also associated the same trends in retirement plans. The framing effects below justify the conclusions made by previous studies by Rabin and Vayanos (2020) that reference dependency and loss aversion are powerful determinants of consumer valuation. The observed bias in the moment can be explained in line with reasoning put forward by DellaVigna (2018) that hyperbolic discounting will always be detrimental to long-run welfare in financial and health-related choices.

Income and gender market segmentation has demonstrated that all types of consumers would not have reacted to behavioural interventions in the same manner. It is also possible to add, following Berthet (2019), that the response to nudges depends on the socioeconomic background, and the policy course should be individual. Similarly, gender-related disparities in regards to risk and prejudice also fit the conclusion of Niederle and Vesterlund (2019), who found that one of the main causes of this issue is the way men and women approached decision making.

The other factor which influenced consumer choice was introduction of technology. The findings are consistent with the results revealed by Goldfarb and Tucker (2019) regarding the increase in cognitive overload and the default dependency caused by online interspersions when the online platform becomes more central to the definition of how individuals shop products. The quality of the results is also similar to Camerer (2018) who wrote that the research on the behavioural economics must be repeatable and the same results must be obtained in a different context.

It is suggested in this paper that behavioural knowledge should be incorporated in consumer policy, marketing and economic modelling. Not only, as Cartwright (2020) emphasizes, does the addition of an element of psychology to the analysis of the economy result in more accurate predictions, but also more efficient and fairer policy intervention.

CONCLUSION

Some of the notable implications of behavioural economics, as far as consumer decision making is concerned, are brought to light in this paper. To reject the rational choice theory, it is demonstrated by synthesising a collection of

experimental findings using the state-of-the-art econometric tools that judgements are systematically biased due to behavioural distortions such as default, framing and present bias. These results suggest that, default options affect the relative quantity of acceptance, framing affects willingness to pay, and, finally, present bias affects impulsive buying. Moreover, the differences found with regard to the degree of income, male and female and technology use indicate that there is no homogeneity base in consumer behaviour and as a result, one cannot apply effective treatment in a homogeneous fashion. It should be noted that the robustness checks demonstrate that the key findings can be deemed as valid and, therefore, more generalisable.

These findings suggest that in policy, behavioural tools are to be used in consumer protection, financial planning and in population health programmes. Individualised nudges, special training, and a digital choice architecture can help to reduce the welfare loss that accompany the absence of rationality and cognitive bias. However, the implementation of behavioural knowledge in policy should not be ethically blind solely because the latter should strive to seek transparency and human autonomy. The above-mentioned statement that was made within the frames of the given paper establishes the ultimate validation that consumer welfare might be enhanced by a significantly considerable margin once the principles of behavioural economics are applied in the methodical way that will furnish the leading guidelines that will be followed by the members of the policy sphere and business world in general to organize the situation which will enable the individuals engage in creating the more appropriate decisions and introduce the long-term benefits to the society as a whole.

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