

HOUSEHOLD INCOME AS A DETERMINANT OF CAR-BUYING BEHAVIOUR IN BOSNIA AND HERZEGOVINA

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Abstract

This paper examines the influence of household income on car-buying behaviour in Bosnia and Herzegovina. The study is based on a quantitative survey of 293 respondents and uses multiple linear regression to test whether household income affects the stated likelihood of purchasing a new automobile within the next twelve months. Price perception and affordability are included as additional economic variables in the model. The results show that household income has a positive and statistically significant effect on car-buying behaviour. The unstandardized coefficient for income is $B = 0.386$ with $p < 0.001$, making income the strongest predictor in the model. The findings suggest that respondents in higher income categories are more likely to express stronger purchase intentions than respondents in lower income categories. The paper concludes that income represents a key economic threshold in automobile purchase intention in Bosnia and Herzegovina and provides practical implications for dealerships, marketers, and financial institutions operating in a developing automotive market.

Key words: automotive industry; Bosnia and Herzegovina; car-buying behaviour; consumer decision-making; household income.

JEL Classification: D12, M31, L62.

1. INTRODUCTION

Automobile purchase decisions represent one of the most important forms of household consumption because they involve a high financial commitment, extended use, and careful comparison of alternatives. A new car is not a routine consumer good; it is a durable product that requires planning, evaluation of financial resources, and assessment of future ownership costs. For this reason, car-buying behaviour is often shaped by both objective financial capacity and subjective evaluations of market conditions.

Among the different factors that influence automobile purchasing, household income is one of the most important. Income determines the range of products a consumer can realistically consider and affects the degree of confidence with which the consumer approaches a major purchase. In lower-income households, the intention to buy a new automobile may remain weak even when the need for transportation exists. In higher-income households, purchase intention may become stronger because the financial burden of buying a car is easier to absorb.

The question of income is particularly relevant in Bosnia and Herzegovina, where the automotive market is shaped by lower average purchasing power compared with many Western European countries. Consumers in such markets often approach automobile purchase decisions with caution. Even when consumers recognize the practical or symbolic value of car ownership, the final decision is likely to depend on whether the purchase is financially realistic. This makes household income a central variable for understanding purchase intention.

The automobile market in Bosnia and Herzegovina is also influenced by the common consumer practice of comparing new vehicles with used vehicles, imported vehicles, and delayed replacement of existing cars. In such a market, the purchase of a new automobile may be postponed even when consumers have a general preference for vehicle ownership. Household income therefore does not simply affect the ability to pay; it may also influence whether consumers perceive the purchase as responsible, timely, and compatible with other household priorities.

Existing research on car-buying behaviour has examined several determinants, including price, brand image, product quality, financing, family needs, social influence, and environmental attitudes. However, less attention has been given to quantitative evidence from Bosnia and Herzegovina. Regional research is still relatively limited, especially when the focus is placed on specific economic predictors of car-buying intention. This paper therefore contributes to the literature by examining income as a determinant of car-buying behaviour in Bosnia and Herzegovina using survey data and regression analysis.

The main objective of this paper is to investigate whether household income has a statistically significant effect on consumers' likelihood of purchasing a new automobile within the next twelve months. Price perception and affordability are included as additional economic variables in the model, but the focus of the article is on the income hypothesis. The paper is structured as follows. The next section reviews the relevant literature on consumer decision-making and the role of income in automobile purchase behaviour. The methodology section explains the research design, sample, variables, and analytical procedure. The results and discussion section presents the empirical findings, while the final section provides conclusions and recommendations.

II. LITERATURE REVIEW

Consumer decision-making and automobile purchases

Consumer behaviour refers to the activities, mental processes, and emotional responses associated with the purchase, use, and evaluation of goods and services (Kardes, Cronley, & Cline, 2011). In the case of automobiles, this definition is especially relevant because car purchase decisions involve more than the act of buying itself. Consumers usually pass through a longer process that includes need recognition, information search, comparison of alternatives, financial evaluation, and post-purchase expectations.

From the perspective of consumer choice theory, individuals make decisions within the limits created by income and prices. Deaton and Muellbauer (1980) explain that consumers choose among available alternatives under budget constraints. This means that consumers may desire many products, but their actual choices are limited by available resources. In the context of automobile purchases, the budget constraint is especially important because a new car requires a substantial financial outlay. The decision is therefore strongly connected to household income and the ability to allocate resources to a high-cost durable good.

Marketing theory also supports the view that car buying is a complex and high-involvement decision. Kotler, Armstrong, and Harris (2017) describe the buying process as a sequence that includes need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour. Cars are expensive, visible, and multi-attribute products, which means that consumers are likely to compare not only price but also quality, brand, reliability, safety, financing conditions, and ownership costs. Nevertheless, economic variables remain important because they establish the boundaries within which these other considerations are evaluated.

Household income and automobile purchase intention

Household income is one of the most consistently identified economic determinants of car-buying behaviour. Higher income increases purchasing power, expands the range of available alternatives, and reduces the relative burden of major purchases. Shende (2014) argues that income, disposable income, loan availability, fuel price, and product price are among the important parameters shaping automobile purchase decisions. In particular, increased disposable income can make the purchase of a car more realistic and can influence the type or segment of vehicle considered by consumers.

Mathur, Bhardawaj, Pandey, Oberoi, and Rani (2018) similarly indicate that rising income levels and improved buying capacity contribute to increased demand for cars. Their findings suggest that income does not merely affect whether consumers can purchase a vehicle, but also influences how confidently they engage with the automobile market. When income increases, consumers may become more open to newer vehicles, better-equipped models, or financing arrangements that would otherwise appear too risky.

Income also remains important in studies that focus on more specific vehicle choices. Nayum and Klöckner (2014), for example, show that household income has a direct effect on car type choice within a broader socio-psychological model. This indicates that income influences not only the general decision to purchase a car but also the characteristics of the vehicle consumers are willing to consider. In this sense, income functions as both a financial constraint and a decision-shaping variable.

At the same time, income should not be treated as the only factor affecting car-buying behaviour. Choo and Mokhtarian (2004) show that attitudes and lifestyle also influence vehicle type choice, while Tonković Pražić (2021) identifies price sensitivity, brand loyalty, aesthetics, innovation, functionality, and susceptibility to social influence as important decision-making styles among car buyers in Croatia. These findings suggest that consumer behaviour in the automotive market is multidimensional. However, even when psychological and social factors are present, income remains a key economic foundation because it determines whether the purchase can be seriously considered.

The role of income can also be linked to perceived risk. A car purchase creates both immediate and future obligations, including the purchase price, registration, insurance, fuel, servicing, maintenance, and possible financing repayments. Higher-income consumers may experience these obligations as manageable, while lower-income consumers may perceive them as a threat to financial stability. For this reason, income may affect not only purchasing power but also the confidence needed to make a high-value decision.

Price perception and affordability are also important in the broader literature, but they are conceptually different from income. Price perception refers to whether consumers evaluate current automobile prices as reasonable, while affordability refers to whether the purchase and ownership environment seems financially

manageable. These variables are relevant because a consumer with adequate income may still delay purchase if prices appear excessive, while a consumer may perceive ownership costs as manageable but still lack the income needed to purchase a new vehicle. Including these variables as controls allows the present study to examine the separate effect of income more clearly.

In developing or transitional markets, income may be especially important because household budgets are more constrained and consumers may be more cautious about large purchases. In such contexts, car-buying intention is likely to depend strongly on whether consumers perceive their income as sufficient to support the purchase. This theoretical and empirical background leads to the main hypothesis of the study.

H1: Household income has a significant positive effect on car-buying behaviour in Bosnia and Herzegovina.

III.METHODOLOGY

This study uses a quantitative research design to examine the relationship between household income and car-buying behaviour in Bosnia and Herzegovina. A quantitative approach was selected because the research objective is to test a hypothesis using measurable variables and statistical analysis. The study follows a cross-sectional design, since the data were collected at one point in time and reflect respondents' current perceptions and purchase intentions.

Primary data were collected through a structured online questionnaire administered to respondents in Bosnia and Herzegovina. A total of 293 valid responses were included in the analysis. The questionnaire measured respondents' likelihood of purchasing a new automobile within the next twelve months, their household income category, and their perceptions of price and affordability. The questionnaire was originally administered in Bosnian, while the items are presented in English in this article for consistency.

The dependent variable is car-buying behaviour, measured as the respondent's stated likelihood of purchasing a new automobile within the next twelve months. Responses were measured on a five-point scale, where higher values indicate stronger purchase intention. The main independent variable is household income, measured through ordinal income categories: up to 1000 BAM, 1001-1500 BAM, 1501-2000 BAM, 2001-3000 BAM, and above 3000 BAM. These categories were coded from 1 to 5 in ascending order, with higher values representing higher household income.

Price perception and affordability were included in the regression model as additional economic variables. Price perception was measured through a five-point Likert-scale statement assessing whether respondents believed that automobile prices were within a reasonable range for the average consumer. Affordability was measured through an index constructed from two items relating to financing accessibility and the ability to manage ownership and maintenance costs. The two affordability items were averaged into one composite variable.

The data were analysed using IBM SPSS Statistics. Descriptive statistics were used to summarize the distribution of respondents by income category, while multiple linear regression was used to test the effect of income on car-buying behaviour while controlling for price perception and affordability. Before interpreting the regression results, standard diagnostic checks were considered. Multicollinearity was assessed through Tolerance and Variance Inflation Factor values, while independence of residuals was assessed through the Durbin-Watson statistic. Normality and homoscedasticity were evaluated visually through residual plots. These checks were included in order to support the reliability of the regression interpretation.

The regression model can be expressed as follows:

$$Car_Buying = \beta_0 + \beta_1 Income + \beta_2 Price_Perception + \beta_3 Affordability + \varepsilon$$

In this model, β_1 represents the effect of household income on car-buying behaviour while holding price perception and affordability constant. The hypothesis is supported if the income coefficient is positive and statistically significant at the conventional $p < 0.05$ level.

IV.RESULTS AND DISCUSSION

Descriptive results

The income distribution of the sample shows that respondents were concentrated in higher household income categories. More than half of the respondents reported household income above 3000 BAM, while the lowest income category represented only a small share of the sample. This distribution is important because automobile purchases generally require substantial financial capacity. The presence of respondents across different income categories allows the analysis to examine whether movement from lower to higher income categories is associated with stronger purchase intention.

Table 1. Household income distribution of respondents

Income category	Frequency	Percentage
Up to 1000 BAM	8	2.7%
1001-1500 BAM	17	5.8%
1501-2000 BAM	38	13.0%
2001-3000 BAM	67	22.9%
Above 3000 BAM	163	55.6%
Total	293	100.0%

Source: Author's survey and computation.

Regression results

Multiple linear regression was conducted to examine whether household income significantly predicts car-buying behaviour when price perception and affordability are included in the model. The model summary indicates that the set of economic variables has modest but meaningful explanatory power. The R value was 0.328, while the R Square value was 0.107. This means that income, price perception, and affordability together explain 10.7% of the variance in car-buying behaviour. Although this explanatory power is limited, it is meaningful in consumer behaviour research, where purchase intention is also shaped by psychological, social, product-related, and situational factors.

The ANOVA result showed that the regression model was statistically significant, $F(3, 290) = 11.617$, $p < 0.001$. This indicates that the model provides a better explanation of car-buying behaviour than a model without the included predictors. The Durbin-Watson statistic was 1.808, suggesting that the residuals were sufficiently independent for the purposes of the regression analysis.

The diagnostic indicators did not suggest serious violations of the regression assumptions. The VIF values for the predictors were close to 1, indicating that multicollinearity was not a concern. The Durbin-Watson value of 1.808 was within the commonly accepted range, suggesting independence of residuals. Visual inspection of the histogram, P-P plot, and residual scatterplot indicated that the residuals were sufficiently normal and that no severe heteroscedasticity was present. These diagnostics support the interpretation of the regression coefficients.

Table 2. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.328	.107	.098	1.351	1.808

Source: Author's computation in IBM SPSS Statistics.

Table 3. Regression coefficients

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
Constant	.318	.389	-	.819	.414	-	-
Income	.386	.079	.286	4.850	< .001	.886	1.129
Price perception	.190	.071	.155	2.689	.008	.928	1.078
Affordability index	-.022	.094	-.014	-.232	.816	.825	1.211

Dependent variable: Car-buying behaviour. Source: Author's computation in IBM SPSS Statistics.

Discussion of the income hypothesis

The regression results support the main hypothesis of the article. Household income has a positive and statistically significant effect on car-buying behaviour in Bosnia and Herzegovina. The unstandardized coefficient for income is $B = 0.386$, with $p < 0.001$. This means that a one-category increase in household income is associated with a 0.386-unit increase in car-buying behaviour, holding price perception and affordability constant. In practical terms, respondents in higher income categories are more likely to report stronger intentions to purchase a new automobile within the next twelve months.

The standardized coefficient for income is $Beta = 0.286$, which makes income the strongest predictor in the model. This finding confirms the theoretical expectation that household financial capacity is central to high-cost consumer decisions. Since a new automobile requires a substantial financial commitment, income operates as a threshold variable. Consumers with lower income may recognize the usefulness of a car but may not view a new automobile as a realistic purchase. Consumers with higher income are more likely to enter the market because the financial burden is more manageable.

This result is consistent with prior research. Shende (2014) emphasizes that disposable income is among the important reasons for buying a car, while Mathur et al. (2018) connect rising income and improved buying capacity with increased car demand. Nayum and Klöckner (2014) also show that income affects vehicle choice within a broader socio-psychological model. The present study adds context-specific evidence by demonstrating that income is also significant in Bosnia and Herzegovina, a market in which household purchasing power is an important concern.

The finding is also important because income remained significant even when price perception and affordability were included in the model. This suggests that income is not merely a background demographic characteristic, but a direct economic determinant of car-buying intention. In other words, the effect of income is not fully replaced by perceptions of price or affordability. Respondents with higher income appear more likely to express purchase intention because their financial position gives them a stronger ability to consider a new automobile as a realistic option.

The relatively modest R Square value should be interpreted carefully. The model explains 10.7% of the variance in car-buying behaviour, which means that economic factors account for a meaningful but limited part of purchase intention. This is expected because car-buying behaviour is affected by many factors outside the model, including brand preferences, family needs, current vehicle condition, trust in dealerships, fuel efficiency, lifestyle, and product quality. The result should therefore be read as evidence that income matters, not as evidence that income alone explains the entire decision-making process.

The results also show that price perception was statistically significant, while affordability was not. However, this does not reduce the importance of the income finding. Instead, it suggests that income is the clearest and most direct economic determinant of purchase intention in the model. Price perception reflects how consumers evaluate the market, while affordability reflects broader perceptions of financing and ownership costs. Income, by contrast, reflects the household's actual financial capacity and therefore has a more direct relationship with purchase intention.

From a managerial perspective, the finding suggests that automobile sellers and dealerships in Bosnia and Herzegovina should pay close attention to income-based segmentation. Consumers in different income categories are unlikely to respond to the same offer in the same way. Higher-income consumers may be more responsive to new vehicles, comfort, safety, and premium features, while middle-income consumers may be more sensitive to price, financing terms, fuel efficiency, and total cost of ownership. Marketing strategies should therefore be adjusted to different levels of household purchasing power.

For financial institutions, the result implies that car loan and leasing products should be designed with realistic household budgets in mind. Financing can support demand, but it is unlikely to replace the role of income completely. If monthly payments do not correspond to household income levels, purchase intention may remain low even when financing is technically available. Therefore, transparent and income-sensitive financing arrangements may be especially important in developing automotive markets.

Practical implications

The results have practical implications for businesses operating in the automotive market. Since income was the strongest predictor in the model, dealerships should avoid treating consumers as a homogeneous group. Instead, sales and communication strategies should be adapted to household purchasing power. For higher-income consumers, the emphasis may be placed on new models, comfort, technology, safety, brand image, and long-term value. For middle-income consumers, communication may need to focus more strongly on price transparency, financing options, lower ownership costs, and value for money.

The findings also matter for banks and leasing companies. If household income shapes purchase intention, then financing products should be structured in a way that reflects realistic repayment capacity. Clear monthly payment information, transparent interest costs, and realistic repayment periods may reduce consumer uncertainty. However, financing should not be presented as a full substitute for income. Consumers are likely to remain cautious if the long-term financial obligation appears too large relative to household resources.

At a broader market level, the results suggest that demand for new automobiles in Bosnia and Herzegovina is connected to household welfare and consumer confidence. Improvements in income, employment stability, and purchasing power may support stronger demand, while inflationary pressure or income uncertainty may delay vehicle replacement. The income effect therefore has relevance not only for individual consumers but also for understanding the development of the automotive market as a whole.

V.CONCLUSION AND RECOMMENDATIONS

This paper examined household income as a determinant of car-buying behaviour in Bosnia and Herzegovina. The study was based on survey data from 293 respondents and used multiple linear regression to test whether income significantly affects the stated likelihood of purchasing a new automobile within the next twelve months. Price perception and affordability were included as additional economic variables in the model.

The results show that household income has a positive and statistically significant effect on car-buying behaviour. Income was also the strongest predictor in the regression model. The finding confirms that consumers in higher income categories are more likely to express stronger purchase intentions than consumers in lower income categories. This supports the view that car buying is a high-involvement decision in which financial capacity plays a central role.

The study contributes to the literature by providing empirical evidence from Bosnia and Herzegovina, where quantitative research on economic determinants of automobile purchase intention remains limited. The findings also have practical implications for dealerships, marketers, and financial institutions. Businesses operating in the

automotive sector should recognize that income-based segmentation is essential. Offers, financing options, and communication strategies should be aligned with the purchasing power of different consumer groups.

The study has several limitations. First, the research is based on a cross-sectional survey, which captures purchase intention at one point in time. Second, the dependent variable measures stated intention rather than actual purchase behaviour. Third, the sample was collected through online distribution and cannot be treated as fully representative of the entire population of Bosnia and Herzegovina. Finally, the model explains only part of the variance in car-buying behaviour, suggesting that future research should include additional factors such as brand loyalty, vehicle quality, family needs, lifestyle, fuel efficiency, and social influence.

Future studies could use larger and more representative samples, compare Bosnia and Herzegovina with neighbouring countries, or examine whether income influences not only purchase intention but also the type of vehicle consumers prefer. Despite these limitations, the findings clearly show that household income is a significant and meaningful determinant of car-buying behaviour in Bosnia and Herzegovina.

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