International Journal of Management, Accounting and Economics
Vol. 2, No. 8, August, 2015
ISSN 2383-2126 (Online)

www.ijmae.com

The Study of Vehicle Safety Aspects Influencing Malaysian Urban Consumer Car Purchasing Behaviour

Ng Ju Hung[1]
Center of Southern New Hampshire University Programme, HELP College of Arts & Technology, Kuala Lumpur, Malaysia

Rashad Yazdanifard
Center of Southern New Hampshire University Programme, HELP College of Arts & Technology, Kuala Lumpur, Malaysia

Abstract

As the amount of accidents on the road increases in tandem with the increase in the amount of cars on the road every year, vehicle safety aspect now plays the primary role which influences consumer choice when making a new vehicle purchase. In one of the research quoted by Koppel et.al, (2008), the most important aspect which influences a consumer's choice of vehicle was safety. The aim of this study is to fine out: 1) describe the thoughts of Malaysian consumers about the safety level of their vehicle, 2) describe the type of vehicle safety system consumers are putting an emphasize on, and 3) describe what are the top three advanced vehicle safety system preferred in their cars.

Keywords: Car, Vehicle Safety, Car Purchasing, Purchasing Behaviour.

Cite this article: Hung, N. J., & Yazdanifard, R. (2015). The Study of Vehicle Safety Aspects Influencing Malaysian Urban Consumer Car Purchasing Behaviour. *International Journal of Management, Accounting and Economics, 2*(8), 913-924.

Introduction

Malaysia is the largest passenger car market in ASEAN (Malaysian Industrial Development Authority [MIDA], 2010, p2). The status as the largest passenger car market is propelled by rapid growth of economy derived from petroleum, high purchasing power and availability of easy financing from financial institutions on top of the establishment of national car projects such as Proton and Perodua. The implementation of the National Automotive Policy (NAP) in 2006 aims to propel the automotive industry in Malaysia to

[1] *Corresponding author's email: jh.ng@hotmail.com*

integrate and transform into a regional and global industry network (MIDA, 2010, p4). The transformation brought in by NAP implementation has encouraged automotive industry players bringing in technology transfer from various countries.

One of the technology transfer benefiting the Malaysia automotive industry is in relation to the vehicle safety system. Vehicles with high level of safety systems were used to be a feature found only in luxury cars in the olden days, but it is the current trend in the industry to have high tech safety systems made available even in most general cars. The availability of general cars with high level of safety features means a safe car is made more easily available to the general public to purchase.

Literature review

Road accident statistics released by Malaysian Institute of Road Safety Research (MIROS) has shown that 462,423 road accidents were reported in the year 2012, compared to 449,040 road accidents in 2011. The total amount of death were 6,917 deaths in 2012, an increase of 0.6% from 6,877 deaths in 2011. While the increase in the number of deaths related to road accidents seems not significant, death toll on the road was increasing every year and MIROS has predicted that Malaysia would record staggering death rate on the road by the year 2020.

Kareem (2003) has stated the reason of accidents are reckless driving, speeding, bad personal habits, social and behavioural misconducts and lack of proper protection. Based on the reasoning stated, it is safe to assume that there were two factors involved here which cause accidents, the human factor and the vehicle factor. While it is possible to alter human behaviour, it will require an extensive amount of time and money to properly educate road users on the proper ethics of driving. Therefore, there is a need to be dependent on technology to help reduce the amount of casualties on the road.

According to Rohr et al (2000), vehicle safety systems have a major impact in reducing the amount of death toll as their availability and take up by motorists grows. Vehicle safety systems are generally categorized between active safety and passive safety. Active vehicle safety systems help to avoid collision from happening while passive vehicle safety systems help to reduce the potential injury resulting from a crash. In recent years, advancement in the automotive industry has a major impact on the vehicle safety systems. Newer technology has merged with traditional safety technologies for added vehicle safety and security protection for vehicle occupants.

Research theory

In a market dominated mostly by Japanese marques such as Toyota, Honda and Nissan, there have been times where most general cars sold in Malaysia come only with a maximum airbag count of two and Anti-lock Braking System (ABS) even in the top of the range models. The lack of safety features in every vehicle sold in Malaysia is alarming, with basic stripped out models even on sale without any airbags or ABS, effectively making each car leaving the dealer lots is essentially a moving coffin on roads.

In recent years, there has been a shift of Malaysian consumers view towards vehicle safety when the Korean marques, particularly Kia, unveil models with better build quality, better design and most importantly, offering more safety features than their equivalent Japanese counterpart for sale in Malaysia. Even Proton, the local national car maker, has begun to emphasize into vehicle safety when designing their cars in a bid to retain their market share. In a research conducted by Accenture (2012), they found out that Malaysian consumers generally prefers in-car features that helps them in avoiding accidents and features that will provide assistance post-accident. In this research paper, the objective of the study was to examine vehicle safety aspects influencing the purchasing behavior of urban buyers in Malaysia.

Methodology

In order to examine vehicle safety aspects as the aspect which influence the purchasing behavior of urban buyers in Malaysia, a descriptive research method was used for this research purpose. The three (3) main purpose of this research is to 1) describe the thoughts of Malaysian consumers about the safety level of their vehicle, 2) describe the type of vehicle safety system consumers are putting an emphasize on, and 3) describe what are the top three advanced vehicle safety system preferred in their cars.

A survey questionnaire consists of ten questions has been drawn up to collect and analyze information from selected individuals for the purpose of this research. For this research, there is an advantage in using a questionnaire compared to interview methodology. According to Wright (2006), questionnaires are less expensive, easier to be carried out and consumes lesser time than interviews.

Data collection

A total of 100 respondents took part in the online survey and another 50 copies of hardcopy questionnaires were distributed. A week after the online questionnaire has been posted and hardcopy questionnaire has been distributed, a combined total of 124 responses were successfully collected. After filtering out 24 respondents which do not meet the research criteria, the data from a total of 100 respondents were left to be worked on.

The first criteria of filtering is location. Online respondents who are not based in Malaysia was filtered out. Since the purpose of the research is to seek out the purchasing behavior of urban Malaysians, only the results of respondents staying in major towns of Malaysia such as Kuala Lumpur, Penang, Johor Bharu and Ipoh were used in this research.

Another criteria of filtering is high income earners. In this case, the high income earners are respondents earning RM 10,000 and above per month. Most of the high income earners are luxury car drivers. Luxury cars on sale in the market right now have a high amount of safety features comes as standard built-in features therefore for the purpose of this research, the response from luxury car drivers are omitted.

Data analysis

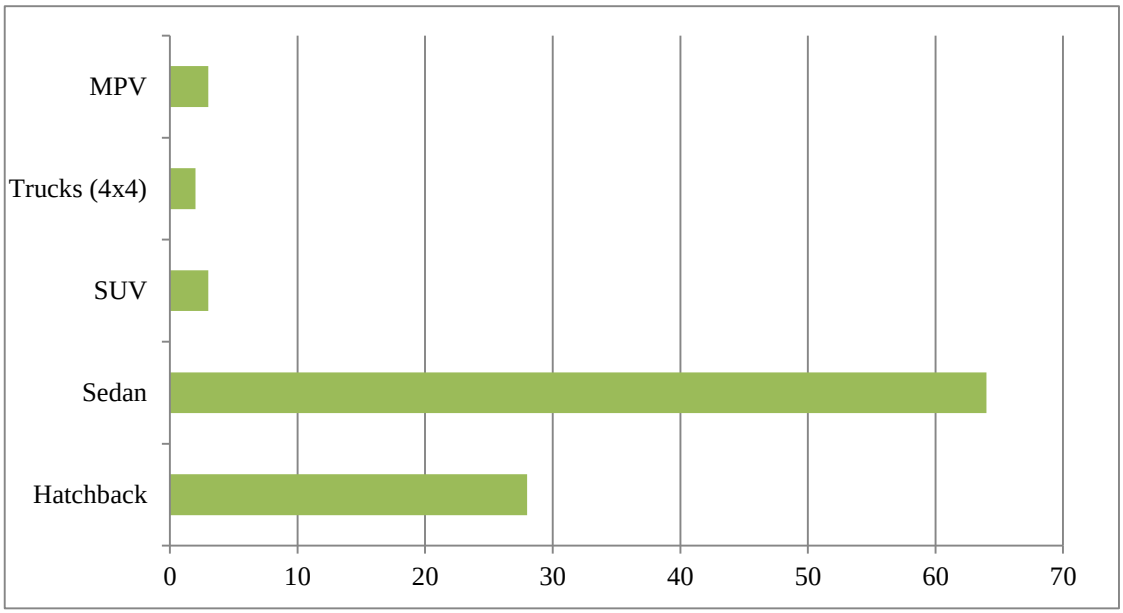

Figure 1 Respondents' owned cars

With Malaysia being the largest market in South East Asia for passenger car market, it is not surprising that most vehicles currently owned by the majority of respondents are sedans. Most sedans in the market offer more practicality, compared to hatchbacks since sedans usually come with a larger trunk space for carrying more load without having to intrude into the passenger cabin.

Hatchbacks are also gaining popularity in the Malaysian automotive market. This could probably be attributed to the compact size of hatchbacks, making manoeuvring around traffic and parking in major town and cities an easier task (See Figure 1).

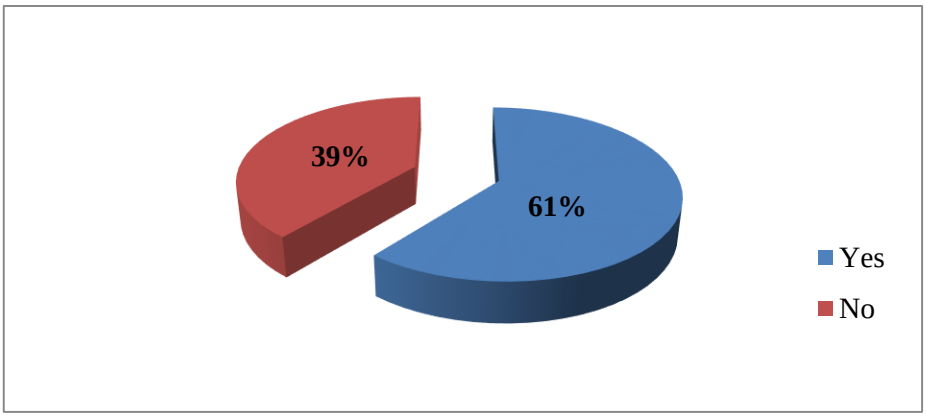

Figure 2 Percentage of respondents think their current vehicle has the adequate amount of safety features built in.

From the survey, airbag systems and anti-lock brakes still remains as consumer's top pick when it comes to vehicle safety. The majority of the respondents selected both of

them as the most important criteria which they emphasize on when it comes to buying a car and since most vehicles on sale now comes with airbags and anti-lock brakes as standard, a total of 61% of the respondents think that their current vehicle has the adequate amount of safety features built in.

The remaining 39% of respondents doesn't think that their vehicle they are currently driving is safe enough to protect them and the occupants inside the car in an event of a collision. Due to the high duties and taxation on cars, prices of cars on sale in Malaysia are expensive and often car buyers will be resorted to commit to long duration hire purchase loans. Due to the long tenure of hire purchase loans, these vehicles with inadequate safety features are still left prowling on the roads on the daily basis since it is not affordable to change to a newer and better car with better safety systems (See Figure 2).

Another reason why respondents think that their current car is not safe enough is due to the lack of choices when it comes to specifying their choice of vehicle. Unlike bigger markets such as USA, Japan or Europe, vehicles imported into or locally assembled in our countries often lacks customization option, with the specification of the vehicle for our market dictated by the respective automotive company headquarters. In short, the Malaysian consumer purchasing decision is often involved in difficult trade-offs between price and safety.

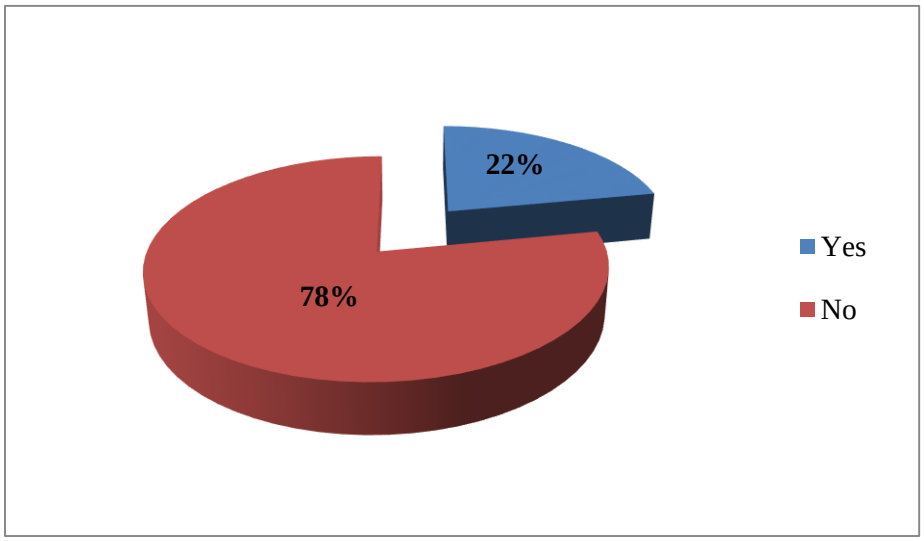

Figure 3 Percentage of respondents think SRS-Airbag alone is sufficient in providing protection

Although airbags has become the standard option when it comes to safety feature in most cars, a total of 78% of respondents feels that having airbag system alone equipped in their car is no guarantee of safety when it comes to an accident. For most respondents, they feel that having active safety features which will help in mitigating accident is far more important than airbags, which works during an accident occur (See Figure 3).

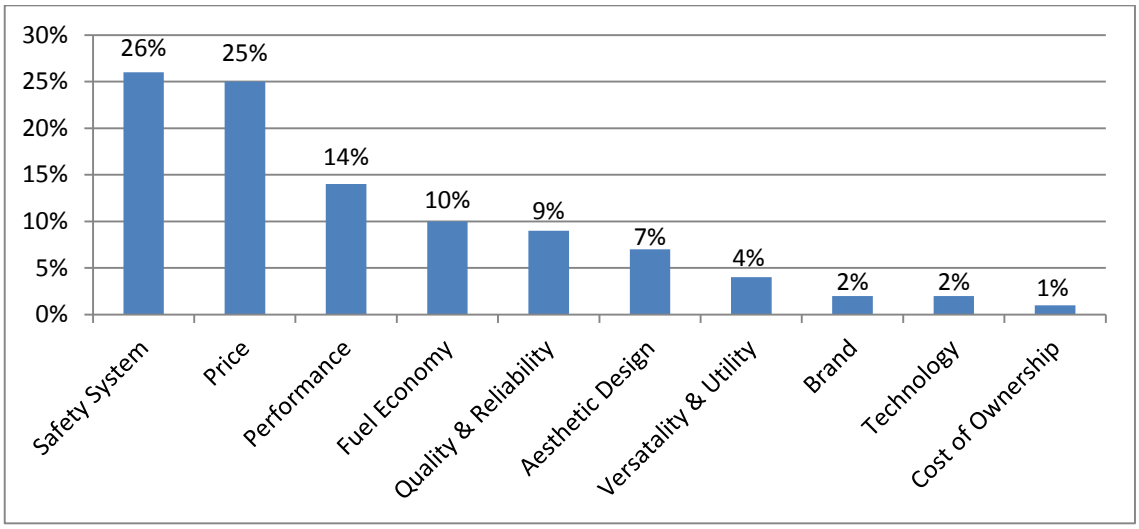

Figure 4 Importance of Factors

In the part of the survey where respondents were asked to individually rate the importance of each factor considered when purchasing new cars, vehicle safety system (26%) has come out as the top pick by the majority of respondents. This was closely followed by price (25%) factor. In the market, a car with good safety does not come with an affordable price compared to other cars with lesser amount of safety features. This represents the conundrum of the majority of vehicle buyers, which plagued various urban consumers when it comes to car purchase in Malaysia but overall, the majority favours a safety system as the first aspect to be considered on when purchasing a car (See Figure 4).

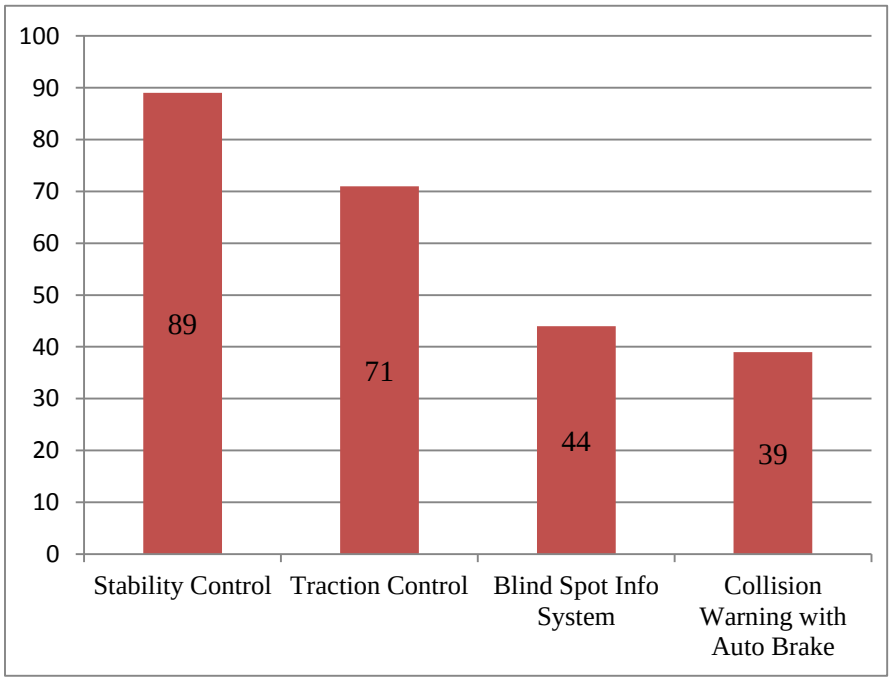

Figure 5 Respondents' three top picks

In one of the questionnaire, respondents were asked what their top three picks is when it comes to buying their next vehicle, assuming that airbags and Anti-lock Braking System (ABS) is a standard fitment. 89 respondents put Electronic Stability Control (ESC) as the first safety criteria when it comes to buying a new car. For them, driving aids such as ESC will help in deterring accidents from happening, especially during haphazard situations.

A total of 71 respondents picked Traction Control as their second top pick when it comes to buying their next cars. As cars nowadays are getting more powerful due to advancement in technology, they viewed Traction Control as another important safety feature to avoid accidents and to make the car easier to control.

The third highest pick with a total of 44% of the votes is Blind Spot Information System (BLIS). BLIS is essentially a type of sensor positioned below the side mirrors to detect any people or objects, particularly motorcyclists who are obscured in the blind spot area of the car. BLIS used to be a technology reserved for luxury cars only, but now it has started to make it into mainstream vehicles, particularly in large sized vehicles (See Figure 5).

Also worthy to be mentioned is Collision Warning with Auto Brake System, which is the top pick number four. This technology is useful in avoiding accidents, particularly involving pedestrians. Camera and sensors in the car will automatically apply the brakes if the car senses the speed of the vehicle is approaching too fast towards the distance of the object or people in front of the vehicle.

In a research conducted by Accenture (2012), they found out that Malaysian consumers generally prefers in-car features that helps them in avoiding accidents. Based on the result of this survey, it has been proven that the research conducted by Accenture is true, given the popularity of BLIS and Collision Warning with Auto Brake System as the third and fourth top pick in this survey considering that these two technologies are currently reserved as an optional feature in certain luxury models and has yet to go mainstream, but this two feature trumps other features such as Emergency Brake Light and Lane Departure Warning as the top pick.

Discussion

Highly educated consumers

Majority of Malaysian citizens is literate and well educated, thanks to the boom in education sector, which saw various new colleges and universities being established alongside the old ones. Being highly educated, consumers tend to value their lives. They tend to be cautious in the products they use, especially long term products which involves high commitment and high price such as cars and they will try to seek out as much information as possible on the safety aspects of vehicles before they proceed with the purchase (Spalding & King, 2006).

The vast size of database on the internet helps consumers in seeking for accurate and in-depth information. Through the internet, consumers can be taught about the importance of vehicle safety systems, gathering feedbacks of owners, reading real account stories of

survivors of accidents and mishaps and the availability of print ready materials such as car brochures. There are also websites which provide comparisons between vehicles in aiding consumers to make the right choice.

Creating and adding value to product

As the largest market of passenger cars in ASEAN, the automotive sector in Malaysia is very competitive. Various brands try to outpace and outperform each other by offering products which are more exciting than their competitors hoping to attract the attention of consumers. Such competition will benefit the end users and thus creates value for consumers.

Among the major brands in Malaysia who took the initiative to step up in terms of packing more safety features in their product line up is Honda and Proton. For Honda, the strategy of packing more safety features in their product line up has proven to be successful that it manages to wrestle down Toyota from the number one spot as the top non-national passenger car brand in Malaysia for the first time ever in 2014 (Tan, 2015). Proton on the other hand, utilize better quality materials to increase the rigidity of the vehicle body and makes various driving aids such as Anti-lock Braking System (ABS), Electronic Stability Control (ESC) and Traction Control (TC) as standard fitment in their new product line up regardless of vehicle size.

Marketing activities and promotion

Active promotion and marketing activities contributed by various automotive companies who actively market their vehicles as among the safest in the competitive automotive sector also encouraged the demand of vehicle with more safety systems fitted. For automotive companies, advanced vehicle safety system is currently the new element to attract new potential buyers and also to retain their current brand supporter. Satisfied consumers will upgrade to a new vehicle with better specifications, especially when the added safety features further add value to the purchase and retains brand loyalty.

During promoting their product, automotive companies also highlight safety systems in their product Point-Of-Purchse (POP) display and brochures. The brochure usually carries information about the company's advanced safety system and also to highlight automotive companies participate actively in various New Car Assessment Programs (NCAP) as a testament of their superior engineering to win the confidence of consumers.

New car assessment program (NCAP)

As advancements in automotive designs and crash avoidance technologies played a role in mitigating accidents and reducing the amount of fatalities on the road, governments and various motoring organizations have established programs that evaluate the crashworthiness of new vehicles. Ratings were awarded based on a vehicle's respective performance during crash simulations and the top overall rating is five stars (Vrkljan & Anaby, 2011).

Malaysia established the first ASEAN New Car Assessment Program (ASEAN-NCAP) in December 2011, with the objective to elevate motor vehicle safety in the

ASEAN region. This program is anticipated to influence consumer towards opting safer cars which encompass the whole spectrum of occupant protection and vehicle crashworthiness. (Khairudin, et. al, 2014). In their research, Spalding and King (2006) stated information from crash testing bodies will influence consumer perception towards safety aspects of vehicles. From the survey result, the majority of respondents feels that having twin airbags alone is not sufficient in providing adequate protection in an event of an accident. This proves the effectiveness of ASEAN-NCAP establishment as a medium to educate Malaysian consumers about vehicle safety.

United Nations Economic Commission for Europe (UNECE)

UNECE, which stands for United Nations Economic Commission for Europe has an Inland Transport Division, known as World Forum for Harmonization of Vehicles Regulations (WP29). According to Tan (2014), this vehicle regulatory body is responsible of creating a uniform vehicle homologation system for vehicle design complied with specified requirements to facilitate international trade. The system of regulations is basically a framework where participating countries agree to a common set of directions and protocols for vehicles and among the protocols are pertaining to vehicle safety aspects.

Malaysia was accepted into the UNECE WP29 on April 4th, 2006 as the forum's 52nd member. The acceptance of Malaysia into the forum has removed the barrier for Malaysia to export their automotive parts or products to more than 50 UNECE member nations without conducting any further testing overseas (Cheong, 2014).

Since the implementation of various UNECE WP29 regulations in stages between 2012 and 2015, the automotive industry players were forced to concentrate on putting more cars on sale with even more well equipped safety features. In 2012, the government has taken the initiative to mandate all new vehicles on sale in Malaysia to have a minimum fitment of two frontal airbags since one of the regulation has stipulated the minimum level of protection of vehicle occupants in an event of a frontal collision (Cheong, 2014).

Direction for future researches

Commercial vehicles safety system

The safety system of commercial vehicles in Malaysia are given the very least attention. In Malaysia, the fitment of airbags in commercial vehicles is not mandatory (Tan, 2015) thus risking the lives of the drivers in an event of an accident. Most commercial vehicles, such as lorries and trucks are built using body-on-frame technique, which is an old technology. Since the body of the vehicle is mounted on a rigid frame, the lack of crumple zone will increase the risk of serious injury or even death in an event of a collision.

Vehicle type specific safety

In the market, currently there are mainly seven different types of vehicles on sale. Vehicles for sale are put into various areas of classification such as microcar, hatchback,

saloon, sports, pick-ups, Multipurpose Vehicle (MPV) and off roaders including Sports Utility Vehicles (SUV). Due to the different shape and size, different category vehicles will perform differently in every crash test. The injury risk among different vehicles are difficult to estimate and this requires different safety systems in each different type of vehicles. In addition, according to Wenzel & Ross (2008), there is a perception among consumers that larger vehicles such as SUV and pick-ups offers more superior safety and structural rigidity which caused booming demands for such vehicles.

Conclusion

Vehicle safety awareness among urban consumers in Malaysia is very high since they value their lives. This can be contributed by the literacy rate among Malaysian consumers. Furthermore, the establishment of ASEAN-NCAP further embed vehicle safety in every consumer's mindset which influence their car purchasing behavior. Various marketing promotions conducted by automotive sector players also played a role in emphasizing safety as one of their unique selling proposition.

The high awareness of the importance of vehicle safety system among consumers is a good indication for the players in the automotive sector to bring in or equip their cars with more advanced safety features. Certain automakers, such as Toyota are still selling cars with basic safety features with exorbitant pricing in the local market. As the world's largest automotive company, Toyota should be obliged to beef up safety features in the cars they are selling in the Malaysian market and should be the leader in the industry which promotes vehicle safety as the top priority. This is important as to reduce road fatalities in order to prevent grievance and hardship when a next of kin died in a road accident.

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