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Impact of Digitalization on Automobile Industry: Challenges and Opportunities

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Abstract

In this digital era, society wants everything within a click or hand's reach. The automotive industry is entering the digital age. Digitization is influencing all aspects of consumer behavior. Digitization is affecting today's world and India's automotive industry. In the coming years, digitization and AI will be crucial. This paper focuses on recent trends of digitization and how automobile supply chain will be impacted between manufacturers and suppliers.

Digitalization may cause challenges for the automotive industry's digital infrastructure. The low purchasing power of Indian economy must be taken into consideration along with the acceptance of buying cars online and providing excellent customer service and values. Additionally, it aims to talk about workable solutions like raising customer awareness, educating customers on technical issues, and promoting digital techniques in the auto-buying process.

Digitization affects India's automotive industry, according to a study. All businesses use advanced technology and are digitalized today. Advanced technology boosts auto sales. It improves product quality and after-sale service, leading to customer and brand loyalty.

Keywords: Digitalization, Automobile industry, Challenges, Opportunities, Purchasing process

Introduction

The process of converting analogue information into digital format, such as text, pictures, and sounds, is referred to as digitization. Because of advancements in digital technology, it is now much simpler to record and archive every facet of daily life in some form of digital format. As a result, we have been moving closer to a situation in which the objects of daily life are interconnected through a network. The impact that digitization has had on the modern world can be seen in the form of the information being shared across the globe by multiple devices that are connected to one another. In point of fact, the term "digitization" refers to the process of automating a process through the transformation of analogue information into digital format. The upgrading of technologies, the transfer of information and data, and the implementation of an online payment system are all components of digitization.

Demonetization has boosted digital payments through Paytm, Freecharge, Mobikwik, and more. People want to pay bills, book tickets, and shop at supermarkets using apps. Now a days advanced payment systems are de facto, which allows customers to check their account status without visiting a bank, and round-the-clock customer support. In E-commerce online shopping saves time and money by eliminating middlemen and allowing customers to try out products risk-free before deciding whether or not to keep them. In Education all educators now use mobile devices such as laptops and tablets to help students and pupils understand difficult concepts through the use of visual aids such as videos and online searches that provide instantaneous access to data, interactive whiteboards, and online classrooms that can be accessed at any time. Vehicle experience is now not just ends with product information and engine sound. Customization needs, 3D visual experience sometime on top of VR motion platform are new normal, along with the rest of the economy, moves in the direction of digitalization. Companies have adapted their methods of customer interaction to the dynamic nature of the modern business world by developing and deploying innovative business models and Touchpoint strategies. However, with these fresh prospects come a new set of challenges. Due to the country's still developing economy and related infrastructure challenges, such as a dearth of digital infrastructure, protecting sensitive information is a top priority in India. Likewise, bolstering IT literacy in India's second- and third-tier cities is a significant challenge (DigitalIndia.gov.in). The industry as a whole face increasing competition, commoditization, and less control on customer relationship. As a means of dealing with difficulties, businesses should begin working on "end to end response systems".

The production of automobiles and the manufacturing of digitized automobiles both benefit significantly from the implementation of digitization. The increasingly digitized world of automobiles has compelled original equipment manufacturers and dealers to rethink their traditional business strategies and paradigms. It is essential for the Indian automobile industry to catch up to the rest of the world's automobile industry in this increasingly digital world. The customer, the original equipment manufacturers (OEMs), the dealerships, and the manufacturer make up the four primary components of the automotive industry. Digitization makes it possible for customers, manufacturers, and original equipment manufacturers (OEMs) to connect in real time and reap the benefits of doing so. The companies that manufacture automobiles strike a balance between themselves using value prepositions such as the product's design and their utility, product customization, and their characteristics. The process of selling a product to a customer is finished by the dealer, who also checks that the customer is satisfied with the vehicle. Everything needs to be digitized so that it is simple for customers, manufacturers, original equipment manufacturers (OEMs), and dealers to make decisions.

It is good to start digitalization of core areas which is also an initiative that has been undertaken by a number of automobile companies on their existing value chain. However, this initiative cannot guarantee the companies' success in the long term. Some businesses are taking steps toward the implementation of fully digitalized business models in order to better prepare themselves for the future, when customers will buy not only products but also final output and services. If original equipment manufacturers do not digitalize their operations, they risk not just losing a signification percent of their current profitability but also their future opportunities at stake.

Even partially digitizing their operations won't buy them much more time. If original equipment manufacturers (OEMs) do not digitize themselves, however, they risk losing 15 percent of their current profitability and a significant portion of their potential future opportunities. This can be avoided by moving quickly to build new digital business models (Accenture Report). The contribution of digitization to GDP is greater than that of individual technologies. It claims that the huge disparity between urban and rural India, as well as the digital haves and have-nots, is due to a 10-point increase in digitization yield and a 74% increase in GDP per capita.

India's economic development, international competitiveness, job creation, innovation, and R&D are all dependent on the country's ability to digitize and maintain these factors (Columbia University Report). To know one's industry full capability through digitization, early recognition of the underlying risk and the initiation of countermeasures to avoid those risks are all crucial components of a successful digitization strategy for an automotive supplier. In addition to the suggested course of action, the automotive industry should begin with its own digitalization (Horvarth, 2015).

Researchers, academics, policymakers, and government officials are beginning to focus on digitization due to its potential utility across many fields. The process of digitization is also in its early stages in India. The government has launched a number of initiatives and policies that pertain to the digitalization movement and its widespread utility. Numerous national and international studies have already described the social and economic effects of digitalization. Regarding the topic at hand, the authors of this study were unable to locate any prior research that examined the effects of digitization on India's automobile industry. The current research aims to quantify the effects of digitization on India's automobile industry.

The goals of this research are to (i) evaluate the effects of digitization on India's automobile sector, (ii) examine the challenges standing in the way of further digitalization, and (iii) discuss the technological needs of the sector.

Literature Review

According to the Ernst & Young report (2015), This article described the need of digital transformation, why it is necessary for the future and its related questions. This pattern emerged due to new technology, changing customer preferences, and new forms of competition. Digitalization is a market risk and opportunity. Digitalization creates pricing challenges, lesser margins and less product retention. It also decreases entry barrier welcoming new competitors and susceptible to cybercrime. But it also brings opportunities for new products and services, partnerships, less and better management while lowering the operating costs and increased profits. Bring new levels of customer engagement through cross/up/down selling etc. for customer retention.

According to research published in the Journal of Direct, Data, and Digital Marketing Practice (2015), Businesses must balance digital perfection and human touch to build customer relationships. Today's customers want to use technology easily. Business owners must make sure their employees keep a human touch despite digital transformation. When digital interfaces are the norm, business relationships will depend on how well they handle emotional and human aspects.

According to Neha Tarsolia, (2017), Digitalization has benefited customers. Through a proper feedback system and complaint analysis, Customer dissatisfaction cases can be lowered to a great extent. Now that everything is at their fingertips, they can submit complaints freely, increasing customer loyalty. Better service means more social media customers. Eliminating manual processes helped relationship managers.

Objective of the study

- In order to observe the effects that digitalization has had on the automobile industry.
- The purpose of this study is to investigate the challenges that will be faced by businesses, dealers, and customers as a result of digitalization.
- In order to discuss the opportunities that is available to both the industry and the customers.

Research Methodology

This investigation has been carried out in the form of a qualitative study with some quantitative aspects included. Understanding the approach that automotive manufacturing service dealers are taking to digitalization, as well as the impact that digitalization will have on them and the business models that they employ, has been the primary focus of this investigation. This study's goal is to investigate the topics at hand using a method that is both quantitative and exploratory. Data obtained from secondary sources are incorporated into the presentation of data and the subsequent analysis of a problem in order to provide assistance. The secondary data comes from a variety of sources, such as automotive companies, the reports of related investigation teams, newspapers, and internet.

Interviews with industry officials, published reports, previous research papers, web searches, consumer surveys, conclave and forum videos, etc. were used to collect data. These are research collection methods.

Developing a Critical Approach to Digitalization in Automotive Industry

Automotive manufacturing service dealers' approach to digitalization: Impacts on business models

Digitization in Automobile Industry of India

The digital revolution is changing the face of the Indian automobile industry. It's altered the production process and other procedures, too, including advertising, sales, and even after-sale care. In addition to affecting consumers at every stage of the purchasing process, the widespread use of social media is allowing businesses to transform their customers into brand advocates who in turn sway the purchasing decisions of others (Batra, R., 2016). It is imperative that manufacturers understand the importance of marketing involving person-to-person, in which the recommendations are found more valuable than traditional ones. It is imperative that marketing strategies include social media as an essential component. Digitization makes it possible for manufacturers and original equipment manufacturers (OEMs) to design a fully individualized experience for prospective purchasers, which increases the likelihood that they will become loyal customers of a given brand.

OEMs that fail to transform will give experience a reduction in their connection with end users and an increase in their connection with the third parties (Kalsi, R.S. 2016).

If potential buyers are kept in touch, businesses could modernize their marketing capabilities and sales and turn their digitally savvy consumers into devoted, long-term customers. This would be a win-win situation.

Figure 1: Role of Digitization in Automotive Industry of India; *Source: Researcher Compilation*

Manufacturers and Original Equipment Manufacturer (OEM): OEM is another way of saying "Manufacturer." Original Equipment Manufacturer (OEM) refers to the manufacturer of a product's original components. The manufacturer needs parts for manufacturing automobiles on a regular basis; after adopting digitization, orders for the necessary parts are automatically goes to the OEM when a particular stock is required, so that OEM can deliver stock in a timely manner. Due to the efficiency of digital payment processing, payments will also be made promptly. So, production will proceed without a hitch. The production line at an automobile

industry can't keep up if it still uses the old methods of making vehicles. In this way, digitalization cuts down on both times spent at work and the amount of effort required to complete a given task.

Manufacturer and Dealer: Good relationship between the manufacturer and the dealer is important because a single manufacturing unit can satisfy the requirements of a number of different dealers. Because dealers upload information about their supplies to cloud servers maintained by the manufacturer, manufacturers now have complete knowledge of the demand at every dealer as a result of digitization's contribution. Because of this, the manufacturer and   the dealer communication is not required for ordering and the dealer gets the stock details directly automatically through the system being used by manufacturer. Other manufacturer-dealer interactions, such as sharing new product information, payment confirmation, order placement, and so on, will be simplified with the use digitization.

Dealer to End-customer: The age of the internet is here and now. It is not necessary for the customer to go to the market in order to make any purchases. Automobiles can be purchased online by customers just like any other good or service. The dealer posts all of the necessary details and three-dimensional product visualization on the internet. Therefore, a customer can understand product better, order while paying for their purchase online 24X7 without any need a single human interaction. With the help of digitization, a dealer is able to provide these services to a customer.

Figure 2: Key Drivers of Digitization; *Source: Gissler & Oertel (n.d.). Are you ready for pole position Accenture Report.*

The above figure shows some of the most important factors that drive digitization. These are the main parts that help with making, supplying, marketing, selling, and taking care of automotive products as a whole. Because competitors around the world are getting better at technology, the Indian automotive industry is taking steps toward digitization and improving technology in the manufacturing sector. There are different ways to run a business, and digital natives are making the automotive industry more advanced. It is ascertaining that digitization is going to have major impacts on the automotive industry.
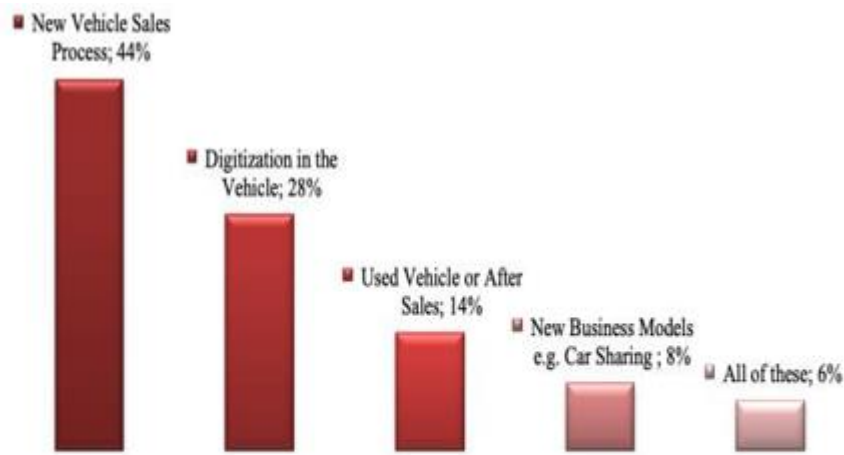
Figure 3: Future Impact of Digitization; *Source: Accenture Report on Automobile Sector*

The figure above shows potential areas of the automotive industry where digitization may have a big future impact. The automotive industry's sales process will demonstrate the impact of digitization because it shows a 44% increase in sales just after digitalization. The digitalization of the vehicle's control system will have a positive impact on the way automotive products are operated and will advance their operating systems. The automotive industry has a significant after sales services where consumers place a high value on vehicle maintenance, which ultimately affects the manufacturer's reputation. If the manufacturer uses a fully digital technique, it will go up by 14%. New business models will be produced and their number will rise by 8% as a result of the digitalization process.
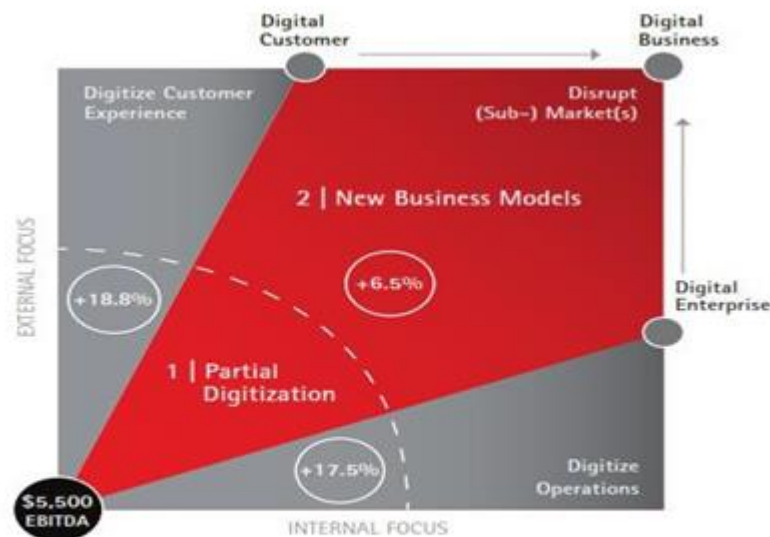

Figure 4: Digitization in Automobile Industry of India; *Source: Accenture Report on Automobile Sector*

Digitization in Automobile Industry of India

Partial Digitization: the EBIDTA Potential from Digitalizing the Extent of the Value Chain Modes of doing business that are more up-to-date.

New Business Models: Realize EBIDTA potential by creating new revenue streams made possible by an updated value chain.

Digital Client: Use digital tools for a more refined approach to your customers in order to increase your business's profits.

Digital Enterprise/undertaking: Enterprises that use digital technologies are able to cut costs across the board, from research and development to administrative costs.

Digital Business: Using digital technology to generate revenue is the goal of digital business, which may involve either the digitization of existing business models or the creation of brand new models.
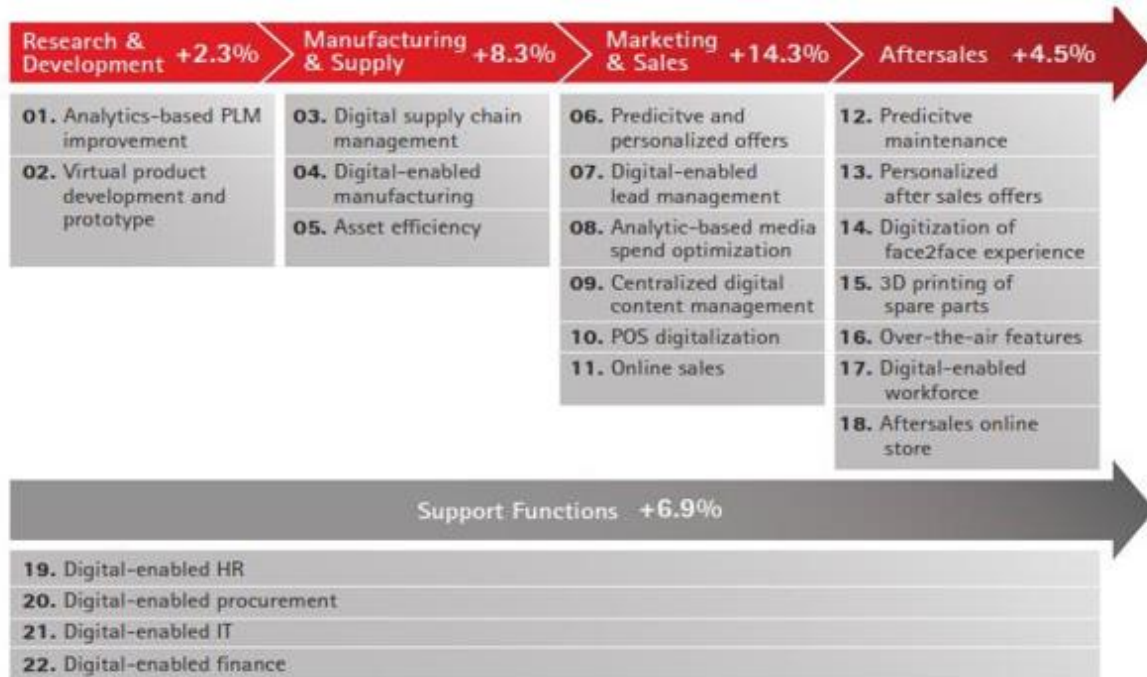

Figure 5: Segments of Automotive of India; *Source: Accenture Report on Automobile Sector*

Realizing the full potential of a digital value chain requires only a partial digitization of the current value chain. According to our calculations, it has the potential to increase OEMs' profitability and economic viability by 36.03% by 2020. There are two dimensions to think about. The digital customer and their interactions with the original equipment manufacturer (OEM) come first; digitizing the customer interaction in marketing and sales as well as post sales accounts over 52% of partial digitization. On the other hand, the digital business: 48% of the total comes from the digitization of traditionally manual processes within the company, such as research and development, production, and supply, and support services. However, automakers that stop short of full digitization stand a low chance of succeeding. Because digitalization is redefining new ways how and what it means to be successful in business, and they are doing so in the automotive industry.

Figure 6: New Business Models in Automotive Sector *Source: Accenture Report on Automobile Sector*

The status of India's automotive industry after digitization is depicted in the figure that can be found above. The traditional automotive industry has seen a 5.2 percent increase in digitization, and demand mobility is increasing by leaps and bounds. When compared to other subsectors of the manufacturing industry, the traditional automotive industry's sales of automobiles are growing at a faster rate. The convergence of markets has led to a gradual improvement in performance, which increased by only 1.1% following digitization despite the market's overall growth. It brought a great deal of new equipment and methods to the vehicle operating system, such as the GPS connectivity, a digital interaction dashboard, and so on. Demonstrating a steep growth in digitalization, although the percentage of increase was relatively small at 0.2%.
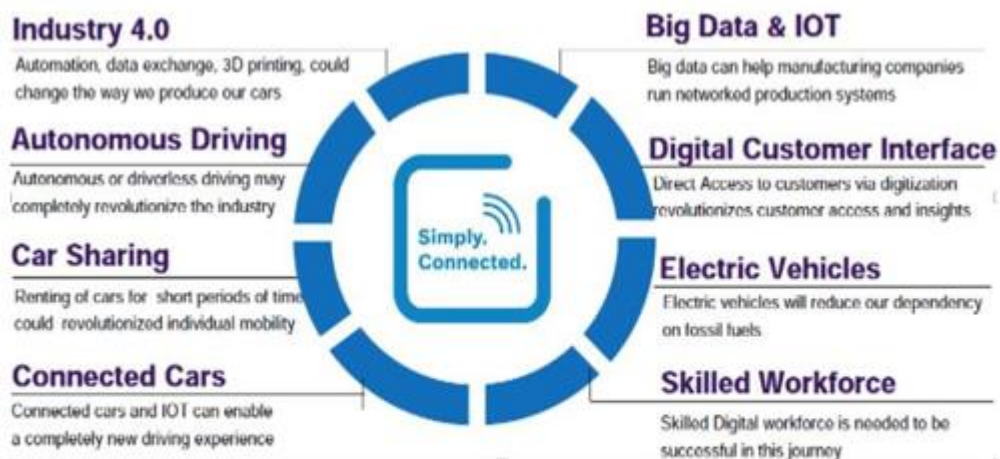

Figure 7: Technology is enabling the Digitalization Transformation; *Source: BOSCH Report on Automobile Sector*

Challenges of Automotive Industry of India

The study found that India's automobile industry experienced numerous difficulties as it embraced digitalization-
Industry
1. Lack of Digital Infrastructure.
2. Security of Data.
3. Lack of I.T. Literacy.
4. Increased Competition.

Dealership:

1. Additional cost with no returns, Low Profit Margins and Manpower still needed.
2. Loss of control over Customer Relationship.

Customers:

- 88 percent of survey respondents said they prefer a car test drive before buying. Customers also believe they'll miss out on test drives if they buy everything online. They'd miss examining the models in person in the showroom, negotiating the price with a salesperson, and getting dealer insight. If everything were digitized, then it would be difficult to choose the right product because there would be no salesperson who could truly comprehend the customer's requirements and recommend a vehicle based on those specifications. This would lead to confusion.

Opportunities

The study found industry digitalization opportunities. Customers can now access social media, aggregators, OEMs, online reviews, etc. Digitization provides endless brand, product, price, model, and user reviews. On the brand's website, they can customize a car. QR codes, RFID labels, augmented and virtual reality are additional lucrative to customers. Companies have understood the importance of web presence and online customer experiences. The ability to visualize the colour, customize the specs of the car in line with associated price, all thanks to virtual world where customers can actually have a feel of the vehicle sitting at their home or office. CRM data helps companies keep customers. Customers can easily complain to companies. If the dealer can't help, customers can contact the company's headquarters and provide feedback.

Impact of Digitization on Automotive Industry of India

Digitization will not only result better consumer experience, but increases productivity a key important factor of every industry. India's automotive industry could save Rs. 16.32mn annually. Digitizing manufacturing companies improves efficiency and reduces costs. The savings span manufacturing to logistics. Digitized factories can use the same assembly line for assembling variety of products or derivatives, reducing both cost and time eliminating shifting time while improving quality. This optimizes capabilities and plant and staff mobilization. OEM needs to invest in new plants and digital technology to meet future expectations.

Technology: The India has become a giant IT hub and has become a technology centre like Silicon Valley.

Infrastructure: Infrastructure in close proximity, is required in both time and space, just as it is in automotive hubs

Labor: In the field of labour, there is a fierce competition for talent in India, and this issue needs to be carefully addressed.

Government Support: Government incentives make India an attractive market for investing in digitized factories. The Indian government launched 'Make in India', promoted on the shoulders of digitalization only in all major economic sectors, not need to mention automotive industry holding a crucial part in it.

Research & Development: Digitalization holds major slice of R&D in manufacturing, especially the automotive industry. Indian automakers are developing virtual products and prototypes now before making actual product prototype.

Manufacturing and Supply: Indian automotive manufacturing and supply is significant. Recent digitization improves original equipment manufacturing and supply by 8.3%.

Marketing & Selling: The use of digital technology had a positive impact on marketing and sales in the automotive industry in India, leading to an increase of 14.3 percent in revenue after its implementation.

After Sales: The recent digitization process in the automotive sector in India saw an increase of 4.5 percentage points in the services after sales provided.

Conclusion

The study focuses on digitization and its effects on India's manufacturing sector, especially the automobile industry. The Indian government is digitizing all industries and sectors. 'Make in India aims to digitalize key economic sectors. Due to globalization and international competition, technology plays a key role in the automotive industry. Digitization affects India's auto industry. Today, all business practices are digitalized, and advanced technology are use in their products. Advanced automotive technology boosts sales. It improves product quality and after-sale service, leading to customer and brand loyalty.

In the early stages of digitization, traditional and digital must work together. India's digital infrastructure is inefficient and cannot be improved overnight; stable and cheap servers' availability and high-bandwidth internet will take time. This study discusses about the challenges that the automakers, distributers, and end users. It describes how to upgrade according to changing customer behavior, new technologies, and opportunities.

In this study, a primary agenda for automotive digitization was developed.

On the basis of the results of this research, (i) The success of government initiatives depends on people actively participating in that change. As a result, local residents and members of society would benefit from increased education provided by local schools and universities;

(ii) People must know how to use government programs to transform their businesses.

(iii) Educated people with concerned knowledge could start knowledge center to aid society, and experts could make periodic visits to the centers to monitor their progress;

(iv) Organization could provide training that would make workers more financially efficient;

(v) Reserve Bank of India and Securities and Exchange Board of India have taken many initiatives to educate the public on the importance of financial literacy and have made online blobs and documents to describe the importance of financial literacy through their respective websites.

(vi) Creating a mental shift among consumers to favour the use of digital methods over more conventional ones

(vii) People need to be aware that which factors will influence their savings, and they also need to know how to make the most of their savings, as well as the strategies or opportunities that could help them do so.

Reference

Rawat, A. (2016). Sales Official, AMP Motors Pvt. Ltd, Jaguar Land Rover, India.

Batra, R. (2016). How to Deliver Delightful Customer Experience in Digital World. *Automotive India, Ernst & Young.*

Ernst & Young. (2015). "Risk and opportunity in an increasingly digital world".

Ernst & Young. (2011). Digitization of Everything, How organizations must adapt to changing consumer behavior.

Kalsi, R.S. (2016). Relevance of Traditional Dealership in Digital Age, *ET Auto Digital Conclave*.

Dasgupta, K. (2016). Head, Google Automotive India, "How to Create Effective Digital Presence for Customer Acquisition & Retention", ET Auto Digital conclave.

Mehta, S. & Rastogi, A.K. (2017). Impact of Digitalization on Automotive Industry: Challenges & Opportunities. *Tokyo International Conference on Business*, Internet, and Social Media, Tokyo, Japan. 1, ISSN 2518-0789.

Tarsolia, N. (2016). CRM Manager, AMP Motors Pvt. Ltd, Jaguar Land Rover, India.

Didyala, P. (2016). MD Accenture Study-Automotive & Industria lEquipment, "Use of technology such as virtual dealership to be closer and easily accessible to customers".

Belleghem, S, V. (2015). When digital becomes human. *Journal of Direct, Data and Digital Marketing Practice,* 17, 2–4.