



Full Length Research

Anatomy of Retail In-Store Analytics in Enhancing Customer Experience: Review of Existing Studies

AWODIRE, Akinpelu Moyosoluwa
Department of Accounting and Finance
Faculty of Management Science
Lagos State University,
Ojoo, Lagos, Nigeria.
Email: moyosoluwa.awodire@gmail.com

AGBOOLA, Kabiru Olatoye
Department of Computer Applications,
Bangalore University,
Bangalore, India.
Email: agboolaolatoye@gmail.com

OGUNDOJUTIMI, Temitope Olanrewaju
Department of Business Administration and Management Sciences
University of Ado Ekiti,
Ado Ekiti, Nigeria.
Email: mineislanre@gmail.com

ODUMUWAGUN, Olukoya Olanrewaju
Department of Accounting
Babcock University
Ilishan Remo, Nigeria.
Email: lanreodumuwapun@gmail.com

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Abstracts: Today, technology helps retailers integrate various In-Store techniques to understand their customers better. In-Store Analytics has been in use in the retail industry for a long time, where retailers administer their Customer Analytics manually. The purpose of this study is to carry out a detailed review of existing literature on concepts of customer experience (CX) and In-Store Analytics. The authors used secondary sources of collecting data obtained from existing researches, and articles published on In-Store Analytics. This study reported that the implementation of In-Store Analytics should meet organization needs such as insight creation, market optimization, CX improvement, category and pricing optimization, performance management, and sales improvement.

Keywords: Business Decision: Customer Experience: Retail Environment: Digital Technologies: Customer Privacy: In-Store Analytics.

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1.0 Introduction of the Study

In the 21st century, the retail industry is characterized by the advancements in the levels of technology in the global market (Awodire, 2018). The industry has become data intensive, and the need to enhance customer experience (CX) has increased to maintain long-lasting relationships with the customers (Akomolafe & Ohanyelu, 2022; Amusat et al., 2022). Therefore, excellent products and services enable most of the retailers to remain afloat in the competitive global industry especially in the global market. Retailers can utilize the In-Store Analytics to enhance and improve customer experience in their stores. Suitable examples of In-Store Analytics technologies are Wi-Fi, video Analytics, loyalty programs, the point of sale data and beacons among others (Retail Next, 2017). The brick-and-mortar stores remain an indispensable part of the customer journey. Despite all the information available online, customers still prefer to physically interact with retailers. Meanwhile, retailers have acknowledged the need to provide a consistent customer experience, but there is the need to strive to consolidate this experience across the customer journey (Forrester, 2016). However, in recent times, customer expectations are high, and there is the possibility for them to be able to access information in a second.

According to Forrester (2015), customer experience in the physical store can directly affect the brand perception because retailers struggle to elucidate their shopping behaviors and meet their expectations. The store associates that are digitally enabled are expected to provide customer data, such as the history of customer purchase information, either online or in-store and their buying pattern (Awodire, 2018; Forrester 2015; Forrester 2016). Customers have extensive data about a particular product when they research online through their mobile devices. Meanwhile, the customer expects the respective associates to be on the same page when they inquire about the product. However, the store associates can respond by providing valuable data the customer requested (Forrester, 2015; Forrester, 2016). Studies have shown there are several benefits to leverage on the behavioral data in real-time if organizations want to be competitive in the retail industry.

Shu'ara & Olaolu (2023) stressed that the behavioral data can help organizations to level the service the customers desire integrally and also provide relevant customer data. However, behavioral data result can be when the associates are equipped with technology to help them deliver first class service (Forrester, 2015; Forrester, 2016). According to Forrester (2016), retailers find it challenging to measure and integrate customer behavior data. The technology platform and integration with existing systems to understand and relate to the in-store customers are sophisticated. Measuring a web-based Analytics platform is not enough to capture customers that research products online and later purchase the products in the brick-and-mortar stores (Shu'ara, 2021a). Retailer efforts prove abortive when attempting to integrate online and offline data. Retailers must incorporate In-Store Analytics technologies to gather both online data and insights in the store premises to give a unique view of the customer. Today, early adopters of In-Store Analytics technologies understand digital store initiatives and integration. Hence, the purpose of this study is to carry out a detailed review of existing literature on concepts of customer experience (CX) and In-Store Analytics.

2.0 Review of the Literature on Customer Experience

2.1 Experience Economy

Experience economy plays a pivotal role in the global economy. According to Christensen (2009), experience economy mainly focuses on the economic value added to a given product or service offered for sale in the global market. Value added is mostly created when companies or organizations engage their customers at a personal level through their customer service representatives to make the shopping experience memorable (Akomolafe & Ohanyelu, 2022; Amusat et al., 2022). Today, there is an increasing demand for the experience-based products, and customers are willing to pay to get better service which is personalized. Organizations

invest in human capital development in their customer service department to ensure that they know the required means and ways of engaging the customers at a personal level.

Cheung & To (2016) argued that defining these limits is the most significant challenge that most of these organizations go through. The authors posited that customer service employees must consider factors such as family, religion, and sex when engaging customers. They added that the experience economy also faces the challenge of increased rates of illegal activities which has raised numerous concerns, especially with the local authorities. Therefore, retailers should focus on the value creating opportunities to maximize their profits by attracting and retaining their customers. Pine II and Gilmore (2014) reported that value creating can be achieved in various ways. The researchers suggested that retailers should enhance their services by ensuring that they have the right personnel with adequate knowledge of the services the organization is offering. They stressed further that retailers should be able to change their customers for the new experiences as a way of ascertaining their quality. They are expected to focus at incorporating the digital technologies with the experiences of the 21st century. Moreover, the implementation of these technologies would create a transformational experience which would be well received by customers' in the global market (Vargo & Lusch, 2016).

2.2 Service Experience

Existing research lacks the 'integrative knowledge' in all the co-creative aspects and perspectives in-service experience (Caru & Cova, 2015). More studies continue to be conducted to address the consistent emerging topics in this field. Researchers and firms across the world depend on the customer responses based on the services which they are given to come up with various innovation to solve issues in this field of marketing (Caru & Cova, 2015; Jaakkola et al., 2015). Service experience is an important area that the retailer should prioritize. Firms offer their services to the customers, and these two parties try to maximize and benefit as much as possible. Customers are continually changing their behaviors as they are always seeking the best services. Most of them do not mind shifting their loyalty to a competitor who is offering better service. Organizations need to acknowledge the significant influence and inputs of competitors in the global market. Customers are also engaged in behaviors that enable firms to improve their CX. Various phenomenological perspectives have been raised primarily on how customers adopt and use various practices to co-create the service experience (McColl-Kennedy et al., 2015).

Customers adopt the integration practices to ensure that they get personalized services from the retailers. Jaakkola et al. (2015) opined that most firms are focusing on the consumer interactions with their employees and operational managers in order to be able to get first-hand information. The classifications practices determine how customers use the products and services these firms offer them. Thus, the need arise for an integrative framework to be able to determine the usefulness of the 'practice-based approaches' towards co-creating customer service (McColl-Kennedy et al., 2015). Further interactions with the customers over the counter remains to be a critical management issue in most firms globally today. Customers tend to have both positive and negative experiences based on the kind of service which they are given. This consumption practice influences the co-creation of these services. In most cases, customers are viewed as actors or even partial employees due to their key contributions to this concept (Akomolafe & Ohanyelu, 2022; Amusat et al., 2022). The physical environment has an enormous impact in creating social relationships between the parties involved. Caru & Cova (2015) mentioned that the dynamic relationship between the customer and retailers has shifted mainly because of the role of the customers. Most studies show that customers play an active as well as an active role in most firms (Caru & Cova, 2015; Akomolafe & Ohanyelu, 2022; Amusat et al., 2022).

2.3 Customer Experience

Studies in the past have covered various areas of customer experience (Akomolafe & Ohanyelu, 2022; Amusat et al., 2022). Some of such researches conducted in the past focused on the importance of CX in companies and organizations, understanding of customer experience (McColl-Kennedy et al., 2015). Companies operating in the global market can design and implement better CX in their designated sales channels adopted by their customers. From the previous studies that have been conducted over the years, CX is equated to excellent customer service where the customer enjoys the shopping experience and is willing to recommend others to purchase the same product provided by a given organization (Barry & Terry, 2008; McColl-Kennedy et al., 2015). Therefore, CX is viewed as an interactive process between the customer and the sales staff who are mandated to ensuring that customer inquiries on a given product are taken care of in various sales channels that are being used by companies in the global market today (Shu'ara & Olaolu, 2023; Shu'ara, 2021a).

In this case, the sales staff is expected to guide the customer into getting their preferred products depending on their needs and preferences (Laplante, 2015; Amaihian et al., 2022). Sales associates in any given organization have an integral part or role in ensuring that the customers have the best shopping experience and service. McColl-Kennedy et al. (2015) argued that this reason is why good CX usually equates to excellent customer service because this is a value creation process where a customer would only understand the value of the product depending on how they receive services at the physical or online stores (Skerrett, 2015). Thus, customer experience can be directly linked to customers shopping or purchasing journey (Baxendale et al., 2015). Experts in the field of marketing and customer relations argue that understanding CX and relations are a journey that takes time to deliver quality and on time services to the customers (Cruz, 2016).

2.4 Customer Experience Management

Customer experience management can be defined as the way in which a firm takes charge or control of its interactions with the customers in the global market. McColl-Kennedy et al. (2015) stressed that the purpose of CXM is to improve and enhance customer satisfaction, their loyalty, and advocacy in general (Akomolafe & Ohanyelu, 2022; Amusat et al., 2022). Experts in the marketing field suggest that this is a concept of viewing and improving the interactions with the customers to improve their shopping experience (Galetto, 2017). Building loyalty among the customers prevents them from moving to their competitor especially if they are offering competitive services. Offsey (2017) concluded that managing customer experience enables an organization to improve its brand. The reason is that customers are loyal and play a huge role in advocating and promoting the brand within their circle.

Offsey (2017) argued that customer loyalty can increase the revenue of the organization from improved sales. The organization can sell to the existing customers as they look out for new ones. Additionally, this creates brand advocates for creating memorable interactions who send a good work for the company (SAS 2017). Organizations across the world have widely adopted the CX model that enables them to get timely feedback from their customers. Further, the adoption of CX enables them to understand their shopping experience and formulate strategies to improve it (Shu'ara & Olaolu, 2023; Shu'ara, 2021a). The feedback is gained from the outreach programs, i.e. the satisfaction polls that are conducted from time to time and the surveys (Rouse & Horwitz, 2017). Hence, once organizations analyze and evaluate this data, they can share their insights with all the relevant departments. These insights enable them to deliver optimal customer experience based on the feedback which they get from their customers.

2.5 Customer Relationship Management

Customer relationship management has been described as how an organization interacts with its customers (Akomolafe & Ohanyelu, 2022). It involves the use of technology to gather data and all the necessary intelligence that is needed to improve the nature of products and services offered to these customers. Awodire (2018) mentioned key determinants of customer relationship management are; that it heavily relies on a database to collect information on all their customers based on their buying behaviors. The organization needs

to analyze and evaluate this data to develop various strategies geared to improve their relationship with the customers (E-Business, 2013). The strategies adopted and implemented should be able to meet the needs of their existing customers as they seek to acquire new ones.

According to Shuara (2021a) various benefits can be associated with customer relationship management. The organization can develop superior services which meet the demands and the expectations of their customers. Ontario (2013) posited that CRM also enhances the marketing strategies adopted by the organization as they are fully aware of their target market and what their customers need. Further, it enables an organization to improve its efficiency when offering their services. In other words, the organization would be able to offer its services and support online for them to maximize the customers' base (Shu'ara & Olaolu, 2023). The management of organizations should be able to anticipate the future demands of their customers by analyzing data of their shopping experience and integrate the CRM systems into their business process (Ontario, 2013).

3.0 Digital Customer Journey

Researches has shown that the advancements in the levels of technology in recent times has resulted to increase in social networking which has led to positive implications for most businesses across globally (Ogbari et al., 2023a; Ogbari et al., 2023b; Egounleti, 2022). Customers have access to timely information as they can quickly get it on the websites (Oracle, 2013). Thus, most organizations aim at offering an engaging experience for all customers who visit their websites. Egounleti (2022) reported that most firms have adopted content marketing strategies to ensure that customers have full access to all product and service information before they can choose their purchase. In most cases, organizations give information on their leadership, products, and services, videos of testimonials to address the needs of their prospective customers (Shu'ara & Olaolu, 2023; Shu'ara, 2021a). According to Awodire (2018), the adoption of customer experience technologies improves brand online presence. The author stressed that increasing customer engagements and interactions by remaining relevant as they provide timely updates. Bummel et al. (2017) concluded that organizations should encourage their customers to optimize on their mobile phones channels in order to get timely information about new products and services.

4.0 Customer Journey Mapping

Bummel et al. (2017) argued for the concept of customer journey mapping as a "visual picture" of the entire customer journey when a customer visits a retail store. Richardson (2010) added that customers can usually give their judgment based on what they experience in the retail stores. The author further mentioned that an organization should take into considerations the actions, motivations, barriers and the questions asked by the customers in their mapping journey. Actions are characterized by what it does at every stage of shopping (Shu'ara & Amin, 2022). The motivation is described by what motivates the customers in their shopping experience. Also, customers ask questions so that they can fully understand what they are buying (Shu'ara, 2021a). However, customers can have various barriers to their shopping experience. The entire process can be tedious and costly.

Isaacson (2012) argued that the culture and the history of organizations influence the mapping journey. However, by using customer journey maps, retailers can gain useful insight of every step of customer's journey. This insight would help them evaluate customer experience at every single stage (Sorofman, 2016). The customer journey map outlines the whole part of the journey process. Customer experience professionals are not the only ones that experience the huge progress of customer journey mapping, but with marketing, customer service, user experience, and product management (Sorofman, 2016; Offsey, 2017). Thus, in reality, retailers can map journey on their store but do not have the competency to understand the journey. Customer journey map can only be measurable with customer journey analytics (hereinafter CJA). Thus, with CJA, CJM

can revolve to real-time visualizations and enhance KPIs of many organizations. Figure 1 below showed the customer journey mapping analyzing all the data collected through a myriad of sensor technologies in real-time visualizations (Offsey, 2017).

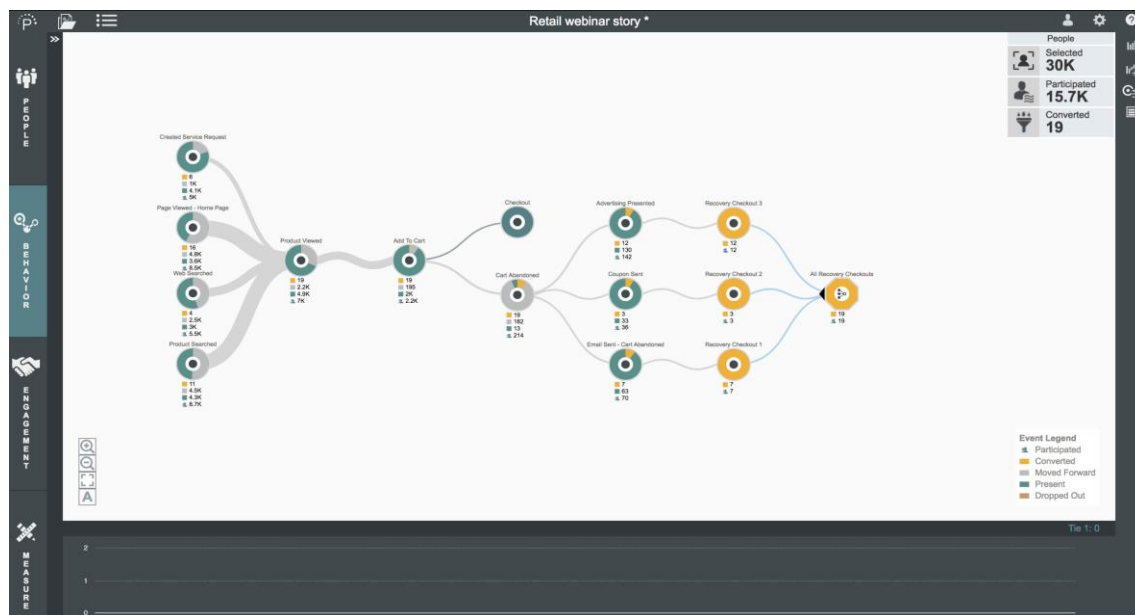


Figure 1: Customer Journey Mapping (Offsey, 2017)

5.0 Overview of In-Store Analytics Technologies

Bullard (2017) argued that the competitive nature of the retail industry require retailers to adopt the latest technologies to enhance and improve customer experience in retail outlets. The author added that retailers need to understand and analyze customer behaviors to devise strategies to improve shopping experience. This reason is why most retailers have adopted these technologies to track customers in their physical stores to achieve goals. Awodire (2018) found that the increasing popularity of e-commerce has necessitated retailers worldwide to implement in-store Analytics to win their customers back from their direct e-commerce competitors operating in the same industry. Thus, finding meaningful insights into customers' behavior data enables retailers to devise strategies by incorporating innovative technologies in their physical stores to make shopping more convenient, fun and worth-while (Scheck, 2017). Through the use of in-store Analytics data, retailers can get a full overview of customers' wants, their shopping trends and buying patterns.

Wood (2017) stressed that retailers need information to know the number of customers who visited their physical stores and who left without buying anything and why, the items that are not available in the shopping carts and the safety of their stores. In-Store Analytics enables retailers to measure the nature of demand for the products offered for sale, nature of services given to customers by the employees (Egounleti, 2022; Shu'ara & Amin, 2022). Furthermore, it can help them determine the nature and level of customer engagements while they are physically in the retail stores. Gopalaratnam (2015) opined that they can optimize the demand forecasts, their scheduling, queue management and sales operations. The organization can be full optimization by maintaining the appropriate staffing levels to manage customer traffic in the stores and manage their shifts as they ensure the smooth running of the operations in the stores (Wood, 2017). Hence, adoption of these technologies enables retailers to be more productive and increase their profit margins.

5.1 Thermal Imaging: Thermal Imaging technology has advanced drastically, as most retailers have discovered its relevance and convenience in counting people in the shopping malls all over the world, where there is massive traffic of people (Shu'ara & Olaolu, 2023; Shu'ara, 2021a). These kinds of systems provide

places such as shopping malls with a flexible solution when it comes to counting people. However, it enhances remote configurations, monitoring of all activities in the shopping malls and on-time response. The introduction of Thermal 2.0 into the market has given retailers across the world improved reliability and low cost of maintenance as they aim at protecting all their sales staff and customers in the shopping malls (Max, 2016). Thermal technology is not light sensitive. Therefore, it can be applied in any physical space making it favorable for shopping malls and stores. The main accuracy challenge that retailers face as they adopt the thermal technology is to be able to blend in an individual heat signature while standing at the same point (Max, 2016).

5.2 Infrared Beams: Infrared beams usually are placed at the entrances of retail stores or shopping malls to count the real traffic of customers entering these facilities (Egounleti, 2022; Shu'ara & Amin, 2022). Infrared beams can be adjusted to heights and ensure that it captures data from people entering the facility. This system of counting people is affordable as infrared beams are easy to purchase. They are also simple to use since they only require height adjustments to ensure all people are countered despite their height (Max, 2013). The primary challenge of these kinds of sensors is the fact that they cannot be able to recognize or even detects the direction of the motion (Ryski, 2011).

5.3 2D Video Analytics: These are monocular sensors that mostly use one camera in the detection of footfalls as people walk in and out of the shopping malls and stalls. In most cases, these kinds of sensors usually are mounted on the ceilings of buildings to ensure that there is a 'top-down viewpoint' (Nasrollahi et al., 2017). Sensors are best for stores and malls that have less traffic of people walking in and out. They should also be installed in buildings which are well lit to enable them to count people. Lack of enough lighting and space affects the way in which these sensors work. Therefore, retailers should be ready to invest in a good space which suits the needs of these sensors (Egounleti, 2022).

5.4 3D Stereo Video Analytics: 3D Stereo Video Analytics is one of the best sensors that is widely adopted and embraced by retailers in the global market. This sensor has the highest level of accuracy from its high-resolution camera and processor (Gopalaratnam, 2015). It can view all objects entering or leaving the physical stores from a 'three-dimension view' (Nasrollahi et al., 2017). The sensor can collect all the empiric data needed by retailers for analysis, i.e. the height, weight, and speed of shoppers in the stores and the direction they are moving in. It also plays a huge role in ensuring the accuracy of counting people. The technology can balance elements such as light and shadows of the shoppers. This technology has the highest level of accuracy when it comes to counting people in the management of high traffic and analyzing complex behaviors of customers in the shopping malls and stores (Shu'ara & Olaolu, 2023; Shu'ara, 2021a; Max, 2017). This solution is using high-performance x86 cores to examine the real-time video data and integrated software Analytics (Hewlett Packard Enterprise 2016).

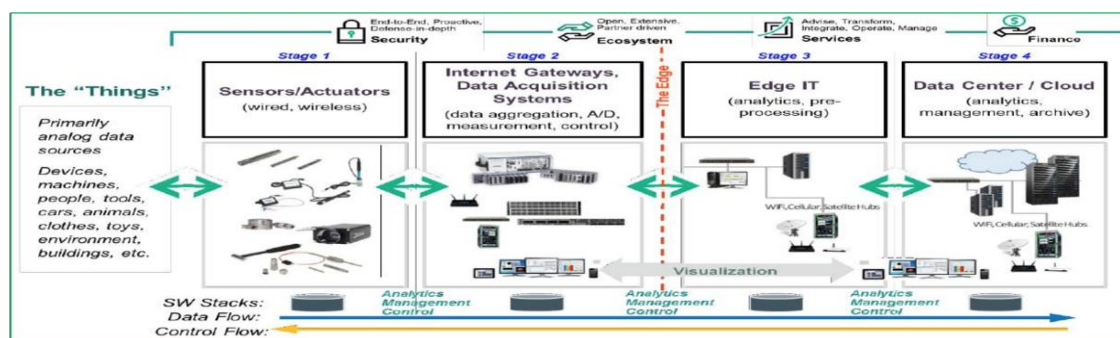


Figure 2: 4-Stage IoT Reference Architecture (Hewlett Packard Enterprise 2016)

6.0 Business Value of In-Store Technology

Today, most businesses and customers across the globe have widely adopted the ‘mobile-location-based services (Gopalaratnam, 2015). Developers are also using the location information with the aim of enriching their applications. With the adoption of the indoor location technologies, they can get contextual information that is valuable to them in various ways. Shu’ara (2021b) posited that using Wi-Fi and Bluetooth Smart Technologies has gained popularity from both business owners and customers in the global market. Businesses have been able to improve and maintain customer engagements and satisfaction through these technologies. The essential data Analytics gained can be used to evaluate the general performance over a given period. According to In Location Alliance (2018), retailers should fast-track the adoption of the indoor positioning technologies and solutions. Because they also define the common standards to ensure that these technologies and devices are fully compatible.

The expectations of the indoor location technologies are very significant. Wubante et al. (2022) reported that indoor location technologies are essential and beneficial to business and customers at large. Large institutions, however, realize most of these benefits. These include the shopping malls, airports, exhibition centers and hospitals with large floor spaces (James et al., 2022; Mosteanu & Faccia, 2020). Most businesses are motivated by these technologies to improve the user experience and engagements while customers visit their physical stores. They also add contextual awareness of these applications to their customers so that they can embrace and adopt them for their benefits. Amaihian et al. (2022) found that businesses also benefit from improved customer satisfaction which can be obtained by reviews given by customers after they receive services from the stores. In addition, these technologies also provide increased and improved Analytics for these businesses. Some of the notable applications that can be combined with the current technologies to improve the above benefits are the mobile couponing and offering in-store assistance to their customers (Ogbari et al., 2023a; Ogbari et al., 2023b; Egounleti, 2022).

7.0 Research Methodology

In recent times, technology helps retailers integrate various In-Store techniques to understand their customers better. In-Store Analytics has been in use in the retail industry for a long time, where retailers administer their Customer Analytics manually. The purpose of this study is to carry out a detailed review of existing literature on concepts of customer experience and In-Store Analytics. In this study, the methodology adopted was secondary sources of collecting data obtained from existing researches, and articles published on In-Store Analytics (Yin, 2009). The data used for the research were collected by means of vital and relevant data from secondary sources through the review of some related and available documents such as textbooks, term papers, and business publications like magazines, journals, newspaper, periodicals, published and unpublished works and statistical records (Yin, 2009). After a detailed study and analysis of the articles collected, the conclusions from the study are presented in the next section of this study.

8.0 Conclusion of the Study

In this study, authors have found that with the tremendous changes in technology, customer’s experiences and behaviors need to be tracked to enhance business growth and improve profits. Detailed review of empirical literatures has also shown that in-store customer tracking is crucial to understanding the behavior of the

customer and reaction towards the product offered in the store. However, most retail shops have not embraced technology in their stores making it difficult for them to monitor the movement of the customers in their shops. Existing customer experience studies shows that In-Store customer tracking is essential in improving the services and products offered in the store. Some organizations prefer using these approaches because it gives accurate data on the customer and their emotional reaction to their products that were available in the store. Organizations all over the world have adopted the use of new technologies for Analytics and customer interactions. Indoor location technologies usually improve the overall customer engagement and experience when shopping online or in the physical stores. Findings from this study revealed that some organizations have not yet fully adapted to the new ways of technology which can increase sales and flow of customers to the businesses. Hence, this study suggested that organizations can invest in various technologies to improve their data collection and Analytics in their physical stores.

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