THE INFLUENCE OF POINT OF SALE SYSTEM IN THE SUPPLY CHAIN PERFORMANCE OF THE RETAIL SECTOR

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ABSTRACT

Some, if not all retail sectors, have Point of Sale which is assistive and reliable on giving the retailers access to relevant data such as inventory levels, customer behavior in addition to supplying business performance reports and analysis. This research aimed to examine the influence of Point of Sale System in the supply chain performance of the retail sectors in Tuguegarao City. The study utilized descriptive and correlational methods of research. A modified questionnaire from the study of Njenga (2017) was the primary gathering tool and the respondents were the employees who are specifically working in the procurement section, stores & inventory management section, finance and accounts, information technology departments and marketing section were considered. The questionnaire had undergone pilot test and was found reliable and valid with the test results of 0.890 for Rapid Scan System, 0.900 for Cloud Based Communication Systems, and 0.885 for Electronic Fund Transfer at Point of Sale. The findings revealed that the systems under the Point of Sale namely the rapid scan systems, cloud based communication system, and electronic fund transfer at point of sale system are influential in the supply chain performance of the retail sector. In addition, there is a significant relationship between the cloud based communication system and the supply chain performance of the retail sector in Tuguegarao City in terms of supply chain responsiveness and agility, increased service speed and customer satisfaction.

Keywords: *Point of Sale, Supply Chain Performance, Retail Sector, Rapid Scan System, Cloud Based Communication Systems, Electronic Fund Transfer at Point of Sale*

INTRODUCTION

Technology and its usage has caught and received the interest of researchers who are out on regular basis to proffer solutions to problems related to technology development for decades (Olasojumi, 2018). The utilization of Information and Communication Technology (ICT) could aid an entity to attain competitive advantage because of the high speed of development, capacity to visualize business performance and cost reducing of doing business (Lindgren, 2011 as cited by Njenga, 2017).

The possibility of technology in supplementing the growth and the performance specifically in the supply chain management in retail sector cannot be over emphasized. Many studies have been administered both locally and globally

(Lindgren, 2011 as cited by Njenga, 2017). Most researches on ICT on the retailer appeared that the technology in general in enhancing efficiency and supply chain performance in the sector. Also, past researches demonstrated positive connections between automation of inventory and supply chain performance (Samuel & Ondiek, 2014).

Electronic point of sale system is widely used all over the country specifically in the retailing firms. Most of the retailers adopting the point of sale (POS) system are the supermarkets and groceries. The extent of usage of the POS has been pointed to the speed and efficiency of the system (Njenga, 2017). In Kenya, most retailers and especially grocery stores, the POS system links scanning equipment with the retailer's inventory management system (Janat, 2009 as cited by Samuel & Ondiek, 2014). An electronic POS is a device that retailers use to track transactions that are processed on a daily basis (Gilbertson, 2009 as cited by Njenga, 2017). Electronic POS is one of the retail ICT that the retailers have run to because of its ability to track sales and identify inventory levels in real time (Indjikian, 2005 as cited by Akerejola, 2017). With POS innovation, organizations can have the capacity to settle charges, utilize electronic printouts and shrewd sense coupons, react to on-line information and data and adopt a more client-centered strategy (Shah, 2009). The system's ability to produce analysis reports which the company can use in decision making is also another factor contributing to wide adoption globally (Njenga, 2017).

The new development in the retail sector like grocery stores and supermarkets is the need to better manage inventory which helps the organization achieve balance between efficiency and responsiveness (Njenga, 2017). Factors such as globalization, demanding consumers, increasing administrative burden as well as economic recession is forcing the retailers into seeking technology that is able to improve their performance (Lee, 2004 as cited by Njenga, 2017). In order to survive with record-keeping needs of retail businesses, a good point of sale system is a must. There is a need to go to specific technologies and to find out the influence of each on the performance of the retail sector; thus, this study was conducted.

Research Objective and Questions

The study aimed to examine the influence of point of sale system in the supply chain performance of the retail sectors in Tuguegarao City.

Specifically, it aimed to answer the following:
1. What is the influence of the point of sale system among retail sectors in Tuguegarao City along:
    a. Rapid Scan System (RSS)

b. Cloud Based Communication System (CBC)
c. Electronic Funds Transfer at Point of Sale (EFTPOS)
2. What is the supply chain performance of retail sectors in Tuguegarao City?
3. Is there a significant relationship between point of sale system and supply chain performance of retail sectors in Tuguegarao City?

Hypothesis

There is no significant relationship between point of sale system and supply chain performance of retail sectors in Tuguegarao City.

Significance of the Study

The study will benefit the retail sectors in Tuguegarao City to understand the effects and roles of each specific technology to their supply chain performance. Also, it will help them to know what system would greatly affect the performance or what system needs to improve or overlook in order for the retailer to achieve customer satisfaction, increased sales and cost reduction. In addition, this will help the researchers to acquire knowledge about the supply chain management of the retailers within Tuguegarao City. Furthermore, the school may opt this research as a basis to further study their system to install more technological advancements like Electronic Fund Transfer at Point of Sale (EFTPOS) to improve their services and lessen the queues of the students on the accounting office.

Literature Review

Underpinning Theory

The E -Technology Perspective Theory and Transaction Cost Economics (TCE) Theory were utilized by the model study which assay to identify the role of POS system to the business and to the customers serving as the basis for the study.

The TCE Theory reveals insight into the part of the digitally enabled supply chain management in aggressive situations. An imperative element of an aggressive situation is the extensive competitive activities. In addition, innovations that help cut down coordination costs are more profitable. Vulnerability is another component that influences performance and it is critical to discover approaches to caution against it (Njenga, 2017). It is essential to the retailers to lessen supply vulnerability which identifies with unpredictable occurrences that happen in the upstream sector of the supply chain and among the causes to supply vulnerability are deficiencies of materials and late deliveries. Unmistakably, supply vulnerability can upset manufacturing and adversely affect sales where merchants and retailers down the chain are also affected.

The E -Technology Perspective Theory disclose that the electronic point of sale includes E acquisition as the network is interlinked with the end goal that when stock falls below the minimum, a purchase order is sent to the supplier of the item through the network (Njenga, 2017). Through this theory, the researchers believed that the retailers could smoothly satisfy customer's demands to the goods. E-Procurement does not have a larger definition and incorporates an extensive variety of business exercises that is why with POS where basic things are replaced quickly they are purchased.

Adoption of Point of Sale

Management practice in an organization ensures the execution of the objectives and policies of an organization (Akerejola, 2017). Business entities and organizations have become increasingly dependent on technologically rooted information to support and drive operational, thus making information technology essential in today's businesses (Okpara & Mohammed, 2012 as cited by Olasojumi, Ugwuchi & Partrick, 2018). Main technologies adopted are automatic cash desks, automatic systems which are able to purchase and elaborate orders, to read and deduct them when they are delivered, and vertical computerized storehouses (Pantano & Viassone, 2014). Looking at the benefits attributable to POS adoption by merchants which includes holding less cash and hence reducing hazards involving cash carrying, it is recommended that adopters becomes markers of the technology to other non SMEs yet to embrace the technology to encourage them to adopt the technology and share in the benefits (Olasojumi, Ugwuchi & Patrick, 2018).

Traditionally, customers would line up at the cash counter each waiting for their turn. In the modern era, we have Electronic Point of Sale which is intelligent, adaptive and insightful giving the retailers access to important information such as inventory levels, customer behavior in addition to providing business performance reports and analysis. The system is fast and customers no longer have to wait for long to be served (Njenga, 2017).

Point of Sale

Rapid Scan Systems

Electronic Point-of-Sale (POS) scanner data furnishes category managers with a one of a kind open door for examining customer packaged products trends and patterns by information mining methods. It provides better decision making capability in the consumer packaged goods area in light of the collection of electronic scanner data during increased complex situations that occur in marketing and supply chain fields (Pepe & Pepe, 2012). POS data and product information

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such as product category and price are provided to the Information System (IS) from the retailer's ERP system. At this moment, IS in the form of Automated Store Replenishment system provides the system users with information regarding out-of-shelf, out-of-shelf-duration and out-of-stock situations (Angerer, 2005). In research conducted by Wamba, it has indicated that retail industry and particularly super market chains can significantly achieve benefits with the adaption of RFID technology and POS network which will ensure timely replenishment and quicken shelf filling (Wamba & Boeck, 2008 as cited by Njenga, 2017).

Rapid Scan is a retail technology that massively improves the speed with which items can be scanned on a retail conveyor belt. Cashiers are not required to manually handle and scan items – therefore there is a time saving. The Rapid Scan solution also has a couple of limitations, in that the preferred payment process is cashless, and non-standard items, such as loose vegetables that require weighing, still require manual intervention (Istook & Hwang, 2001).

Cloud Based Communication

POS system can deliver a different business analysis and performance reports. These reports extend from essential examination of everyday or yearly net revenues, to distinguishing proof of top selling items or services in an organization's scope of items. Such information has the ability to provide a business with useful picture of their overall performance and can be of relevance when it comes to conducting marketing campaigns (Subramani, 2004).

Cloud communications are voice over internet protocol (VoIP) and information common denominator where broadcast communications applications are shifting and storage are monitored by an external party of the organization exploiting them, and they are put over public Internet. Cloud services are an expansive term, referring principally to data-centre-hosted services that are run and accessed over an Internet infrastructure. As of not long ago, these services have been information driven, however with the advancement of VoIP (voice over Internet convention), voice has progressed toward becoming some portion of the cloud phenomenon. Cloud communication alludes particularly to voice services and all the more particularly the substitution of regular business phone equipment, for example, a Private branch exchange, with third-party VoIP service (Josep *et al,* 2010).

Cloud communication accouter relay voice and data communication applications and services, hosting them on servers that the accouter own and preserve, bestowing their clients enter to the "cloud." In addition, they pay for services or applications they utilize, clients have a more cost effective, solid and secure communications environment, without the challenges related with more traditional PBX systems. (Josep *et al.,* 2010).

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Electronic Fund Transfer at Point of Sale (EFTPOS)

POS cash register enables their customers to pay for their shopping using a debit card or credit card rather than cash. The money must be obtained electronically from the customer's account and paid to the store's account. This process of transferring cash is called Electronic Funds Transfer at the Point of Sale or EFTPOS. With a specific end goal to enhance security, the bank/credit card computer additionally verifies whether the card has been accounted for as stolen. It will likewise check for abnormal spending conduct when utilizing that specific card to spot conceivable fraudsters. In the case everything is fine, a message is sent back to the POS unit to approve the purchase and funds are transferred from the customer's to the merchant account (Burstein *et al.,* 2004).

Retailer

The literature suggests that suppliers in the retail supply chain should use shared consumer demand information and historical point-of-sale (POS) data to forecast orders placed by retailers like grocery stores (Lapide, 1999 as cited by Williams & Waller, 2010) because a few large retailers may account for a large portion of total retail market share and require different management techniques which may improve longer-term, supply-side decision making and enhance marketing and sales planning for individual accounts (Lapide, 2005 as cited by Williams & Waller, 2011).

In fact, retailers generally have systems in place that generate orders systematically in consideration of these factors, and this systematic ordering pattern is reflected in order history (Williams & Waller, 2010). Often, suppliers use a retailer's order history and traditional time-series forecasting methods to forecast the retailer's orders. However, developments in sell-through or POS sharing have increased interest in whether POS data sharing might improve forecasting performance (Williams, Waller Ahire & Ferrier, 2014). The POS is customized by retail industry based on varied needs of small and medium sized retailers (Sukhia, Khan & Bano, 2014).

It has been stated in numerous studies that the greatest challenge to the electronic banking sector was winning the trust of customers over the issues of privacy and security (Bestavros, 2000 as cited by Adeoti, 2013). POS system is defined as a device that is installed in the center of the sale of goods and services instead of paying cash by physical transportation of money, the transaction amount from an account holder i.e. customer are deducted from their accounts electronically, using an electronic card, while the card acceptor (seller) is paid. This will engender customers' confidence in the use of POS (Olasojumi, Ugwuchi & Partrick, 2018).

Demand for payment instruments is set in the same way as demand for other goods and services, in other words by the consumers' selections and their private incentives, i.e. the costs that arise from the consumer's option. In a competitive sales sector, merchants must account what consumers demand and also what nearby competitors agreed but looking only at the consumer side neglect the complexities of two-sided markets. In payments, the two sides of the market are merchants and consumers. The demand for a payment service depends on the decisions made by both merchants and consumers. Understanding that dealer unique implications when they accept payments and that they may therefore view payments differently from clients, the Bank mandate a national survey of dealers on their agreed type of payment for point-of-sale (POS) transactions in 2006. The survey focused on how merchants perceive payment methods, the share of each payment method by annual sales, and the associated costs of accepting payments (Leinonen, 2009).

Supply Chain Performance of Retail Sector

The performance of a supply chain in the retail sector is normally evaluated by how it is able to reduce costs and increase value. For overall performance of an organization, it is important to monitor the supply chain as it encompasses almost 75 percent of the operating budget expense (Palevich, 1999 as cited by Samuel and Ondiek, 2014). Performance of the supply can be determined in various ways including efficiency, responsive and speed of service delivery (Jacobs *et al.*, 2001). Efficiency suggests minimization of aggregate system wide costs from transportation and distribution to inventories of raw materials, work in process and completed goods. To be effective, firms ought to use systems focused on making most noteworthy cost efficiency and for such efficiencies to be accomplished, non-value adding practices ought to be eliminated, economies of scale sought after and advancement methods utilized to get the best use capacity.

Responsiveness means the supply chain should be able to ensure that the customer's needs/demand are attended to without delays. For retailers to attain high levels of responsiveness, they need to be flexible to the continually changing and broad needs of their customer. Firms also need to build to order and mass customization processes as a way to meet the customers' tailor-made requirements (Njenga, 2017).

Improved service speed is another measure on which the performance of retailers can be evaluated. With increasing competition in the retail sector and especially with supermarket chains, the speed at which service is delivered influences the choice the customers make on which retail store to shop from. Speed of service delivery increase the effectiveness of the retailers. Effectiveness implies making the best decision at the perfect time. Firms ought to guarantee that they do enough research to realize what their customers require and ought to likewise get

the correct resources to serve their customers satisfactorily (Shah, 2009). Organizational performance can accordingly be best measured through operational cost reduction and customer service delivery levels.

In the past study of Scott and Brian, it has clarified that the measuring consumer loyalty has turned into an undeniably vital component for successful business operation today (Scott & Brian, 1996 as cited by Njenga, 2017). Many retail stores conduct undercover investigations of different outlets once per year and the data is utilized by top administration to figure out which outlets require attention or even to help decide whether there is a generic problem pervading all through the organization and how such an issue may influence the services offered to the customers and general performance (Parasuraman et. al., 1993 as cited by Samuel & Ondiek, 2014).

Research Paradigm

Independent Variable   **Dependent Variable**

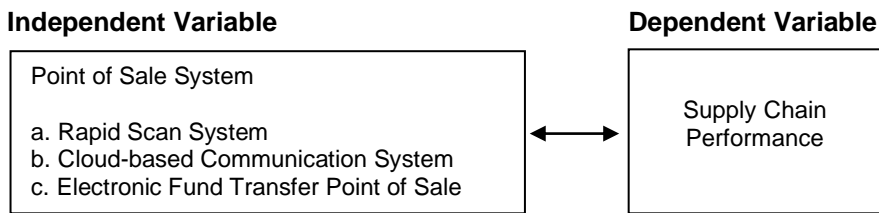| Point of Sale System a. Rapid Scan System b. Cloud-based Communication System c. Electronic Fund Transfer Point of Sale	←→	Supply Chain Performance

Figure 1. Paradigm of the Study

Figure 1 depicts the influence of each system of the point of sale system on the supply chain performance of the retail sectors.

METHODS

The study utilized descriptive-correlational method of research. It was conducted among retail sectors specifically supermarkets, grocery stores and convenient stores within Tuguegarao City, Cagayan. In each retailer using POS, five (5) employees specifically those working in procurement section, stores & inventory management section, finance and accounts, information technology departments and marketing section were considered. A total of 13 retail sectors in Tuguegrao City are using RSS, CBC and EFTPOS; however, 6 of them declined due to management policy and time constraints. The retail sectors that were considered in the study were 2 grocery stores, 2 supermarkets and 3 convenient stores. The data used in the study were gathered through conducting a survey by providing questionnaire to the respondents. The questionnaire was adapted from the study of Njenga (2017) which was modified to directly coincide with the study. The questionnaire consisted of four parts. The first part gathered information about

the Rapid Scan System. The second part contained Cloud based Communication System information. The third part dealt with Electronic Fund Transfer at POS and lastly the fourth part concerned about Supply Chain Performance.

Prior to the data gathering process, a pilot testing was conducted to test the reliability of the questionnaire. The researchers surveyed the five employees of a drug store using Point of Sale. The results of the reliability test were as follows: Rapid Scan System (Reliability value: 0.890), Cloud Based Communication Systems (Reliability value: 0.900), and Electronic Point of Sale (Reliability value: 0.885). This indicated that the questionnaire was reliable and valid. Afterwards, a permission letter was sent to the Dean of SABH Department and endorsed to the VP for Academics. Upon permission of the conduct of the study, the researchers personally administered the questionnaire among the respondents and retrieved personally such questionnaire. After these, the researchers tallied the results and used the data for the research. As to the department which the respondents belong to and the data on the survey, frequency and mean were used to summarize and to distinguish them. Meanwhile, the data findings were analyzed using the following statistical measures:

Rapid Scan System	Qualitative Description
1.00-1.49	Not Influential
1.50-2.49	Slightly Influential
2.50-3.49	Moderately Influential
3.50-4.49	Influential
4.50-5.00	Very Influential
Cloud Based Communication System	Qualitative Description
1.00-1.49	Not Influential
1.50-2.49	Slightly Influential
2.50-3.49	Moderately Influential
3.50-4.49	Influential
4.50-5.00	Very Influential
Electronic Fund Transfer at Point of Sale	Qualitative Description
1.00-1.49	Not Influential
1.50-2.49	Slightly Influential
2.50-3.49	Moderately Influential
3.50-4.49	Influential
4.50-5.00	Very Influential
Supply Chain Performance	Qualitative Description
1.00-1.49	Very Low Performance
1.50-2.49	Low Performance
2.50-3.49	Moderate Performance
3.50-4.49	High Performance
4.50-5.00	Very High Performance

Lastly, Pearson-R Product Correlation analysis was used to determine the relationship between systems under point of sale system and the supply chain performance.

RESULTS

Table 1a. Influence of Rapid Scan System in the Retail Sector

Rapid Scan Systems	Mean	Qualitative Description
Our organization uses EPOS to track inventory	4.20	Influential
POS helps in calculating how much to order	4.03	Influential
Scanning systems promote better decision making because of accurate and raid data	4.17	Influential
Scan systems provide rapid, accurate and efficient means of data processing	4.40	Influential
Automatic reordering improve service speed to customers	4.20	Influential
Use of Rapid scan systems amounts to reduced revenue losses resulting from data errors	4.34	Influential
Rapid scan systems speed customer check out hence reduced queues	4.49	Influential
Rapid scan systems eliminate human errors	3.86	Influential
Overall Mean	**4.21**	**Influential**

Table 1a shows that the rapid scan systems in the retail sector are influential. Rapid scan systems provide rapid, accurate, and efficient means of data processing. Moreover, it also speeds customer check out hence, reduces queues.

Table 1b. Influence of Cloud Based Communication Systems in the Retail Sector

Cloud Based Communication Systems	Mean	Qualitative Description
Our organization uses POS data for purposes of shelf filling	3.77	Influential
Our firm regularly generates business performance reports from POS system	4.43	Influential
Firm cloud provider has quick data retrieval	4.29	Influential
POS data helps our company identify patterns of products purchased	4.66	Very Influential
POS provides data that quicken the rate of shelf filling to customers	4.11	Influential
Cloud communications is safe and requires different levels of configuration and management	3.91	Influential
Cloud based unified communication is cost effective for retail firms	4.06	Influential
Overall Mean	**4.18**	**Influential**

It can be inferred from table 1b that the POS data are very influential in identifying patterns of the products purchased. In addition, POS system is influential in generating business performance reports of the retail firm. The cloud based communication system as a whole is influential to the retail sectors.

Table 1c. Influence of Electronic Funds Transfer at Point of Sale (EFTPOS) in the Retail Sector

Electronic Funds Transfer at Point Of Sale	Mean	Qualitative Description
Customers want to pay for goods and services in the most convenient way possible	4.69	Very Influential
Payment via debit and credit cards encourages customers to spend more than payment in cash	3.63	Influential
Use of EFTPOS eliminates need for retailers to take frequent visits to bank	3.37	Moderately Influential
EFTPOS machines are easy to install and are user friendly	3.97	Influential
EFTPOS machines are portable and lets cashiers take payments anywhere, anytime leading to more convenient transactions	4.20	Influential
For small purchases, it is quicker to pay in cash	4.49	Influential
Overall Mean	**4.05**	**Influential**

As seen from table 1c, it shows that the EFTPOS is very influential to the customers of the retail firms in paying goods and services as they see it to be the most convenient way possible. However, it is moderately influential in eliminating the need for retailers to take frequent visits to the bank. Overall, the EFTPOS is influential in the retail sector.

Table 2. Supply Chain Performance in the Retail Sector

Supply Chain Performance	Mean	Qualitative Description
Cost reduction	4.14	High Performance
Increased customer satisfaction	4.34	High Performance
Increased service speed	4.37	High Performance
Reduced queues	4.17	High Performance
Improved supplier relationship	4.37	High Performance
Supply chain responsiveness and agility	4.20	High Performance
Competitive advantage	4.40	High Performance
Increased sales	4.34	High Performance

From the table above, it indicates that the retail sector has high performance in its supply chain management. The use of POS could improve competitive advantage, increase service speed, and improve supplier relationship.

Table 3. Significant Relationship between Point of Sale and Supply Chain Performance

Supply Chain Performance	Rapid Scan System		
	Pearson-R	P-Value	Decision
Cost reduction	.111	.526	Accept Ho
Increased customer satisfaction	-.028	.874	Accept Ho
Increased service speed	.120	.491	Accept Ho
Reduced queues	-.067	.701	Accept Ho
Improved supplier relationship	-.135	.440	Accept Ho
Supply chain responsiveness and agility	.150	.391	Accept Ho
Competitive advantage	.045	.795	Accept Ho
Increased sales	.023	.896	Accept Ho

Supply Chain Performance	Cloud Based Communication Systems		
	Pearson-R	P-Value	Decision
Cost reduction	.301	.079	Accept Ho
Increased customer satisfaction	.369	.029*	Reject Ho.
Increased service speed	.421	.012*	Reject Ho.
Reduced queues	.129	.460	Accept Ho

Improved supplier relationship	.254	.141	Accept Ho
Supply chain responsiveness and agility	.451	.006*	Reject Ho.
Competitive advantage	.269	.119	Accept Ho
Increased sales	.278	.105	Accept Ho

Supply Chain Performance	Electronic Funds Transfer at Point Of Sale		
	Pearson-R	P-Value	Decision
Cost reduction	.272	.113	Accept Ho
Increased customer satisfaction	.294	.087	Reject Ho.
Increased service speed	.200	.248	Reject Ho.
Reduced queues	.101	.565	Accept Ho
Improved supplier relationship	.272	.114	Accept Ho
Supply chain responsiveness and agility	.155	.373	Reject Ho.
Competitive advantage	.097	.578	Accept Ho
Increased sales	.229	.185	Accept Ho

*significant at 0.05 level

As gleaned from the table, a significant relationship is seen between supply chain performance along increased service speed, increased customer satisfaction and supply chain responsiveness and agility of the retail sector and the cloud based communication system because the P-value is less than 5% level of significance. On the other hand, it is evident on the table that there is no significant relationship between the rapid scan system and EFTPOS in the supply chain performance of the retail sector because the P-value is greater than 5% level of significance.

DISCUSSION

The findings revealed that rapid scan systems are influential to the retail sectors. The customers are no longer needed to wait for so long for them to be entertained. The prices of goods can be readily provided in using these systems. Rapid Scan is a retail technology that massively improves the speed with which items can be scanned (Istook & Hwang, 2001). Also, it provides better decision making capability in the consumer packaged goods area in light of the collection of electronic scanner data during increased complex situations that occur in marketing and supply chain fields (Pepe & Pepe, 2012). In addition, it provides the users with information regarding off-the-shelf, off-the-shelf-duration and out-of-stock situations (Angerer, 2005).

Moreover, Cloud Based Communication (CBC) system is very influential in identifying patterns of the products purchased. Through CBC, it is easier for the retail sector to attract customers; thus, increases its sales because the information

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available could be used in advertising the product that is usually purchased by many. Such information has the ability to provide a business with useful picture of their overall performance and can be of relevance when it comes to conducting marketing campaigns (Subramani, 2004). In terms of inventory management and reports particularly in shelf filing and data retrieval, CBC system is influential. The system provides real-time data which will be used to make sales and inventory reports. The data can also be used to track or distinguish items or services that is frequently purchased by customers. These reports extend from essential examination of everyday or yearly net revenues, to distinguishing proof of top selling items or services in an organization's scope of items (Josep *et al.,* 2010).

Additionally, Electronic Fund Transfer at Point of Sale (EFTPOS) was determined to be influential to the retail sectors. The EFTPOS encourages cashless transactions especially for bulk or large purchases because it is more convenient on both parties to use cards and also it is more secured than having a cash on hand. Losing a card is better than losing cash on hand because the card can be replaced by the affiliated bank and the cash on it can still be used for future transactions. POS cash register enables their customers to pay for their shopping using a debit card or credit card rather than cash (Abdul-Muhmin & Alzamel, 2001). With a specific end goal to enhance security, the bank/credit card computer additionally verifies whether the card has been accounted for as stolen. It will likewise check for abnormal spending conduct when utilizing that specific card to spot conceivable fraudsters. In the case everything is fine, a message is sent back to the EPOS unit to approve the purchase and funds are transferred from the customer's to the merchant account (Burstein *et al.,* 2004).

Furthermore, findings revealed that the retail sectors have high performance in its supply chain management specifically in reducing cost and increasing sales. The retailers could control costs by ordering the usually purchased products of the consumers to their suppliers; consequently, it would increase their sales and reduces the storage costs. Buying newly introduced products can be done but not in a large purchases to prevent possible losses. The performance of a supply chain in the retail sector is normally evaluated by how it is able to reduce costs and increase value (Palevich, 1999 as cited by Samuel and Ondiek, 2014). Performance of the supply chain can be determined in various ways including efficiency, responsiveness and speed of service delivery (Jacobs *et al.,* 2001). Customers want to be attended without delay. Retailers, being responsive enough, increased customer satisfaction. In addition, with increasing competition in the retail sector and especially with supermarket chains, the speed at which service is delivered influences the choice the customers make on which retail store to shop from (Shah, 2009).

Lastly, the result showed that there is a significant relationship between supply chain performance along increased service speed, increased customer satisfaction and supply chain responsiveness and agility of the retail sector and the cloud based communication systems. The retailers are flexible to the continually changing and broad needs of their customer; thus, they had attained high levels of responsiveness making the consumers satisfied. Being capable to adapt to the new demands of the consumers could make the supply chain management of the retailers to become agile; hence, increasing the firm's service speed in delivering the finished goods to the end users. Firms also need to build to order and mass customization processes as a way to meet the customers' tailor-made requirements (Njenga, 2017). Each customer wants to be attended without delay and he has the choice to choose which store he will buy from. A retail sector being responsive enough to its customer's demands and expectations, makes them stay and be part of the store's valued customers. Speed of service delivery increases the effectiveness of the retailers (Shah, 2009). On the other hand, there is no significant relationship between the rapid scan system and electronic fund transfer at point of sale in the supply chain performance of the retail sector. The cashiers manually scanning the items and when the barcode was distorted or not readable by the system thus cannot be scanned correctly making the work tedious. The Rapid Scan solution also has a couple of limitations, in that the preferred payment process is cashless, and non-standard items, such as loose vegetables that require weighing, still require manual intervention (Istook & Hwang, 2001). In addition, using debit cards or credit cards doesn't increase sales because the amount that will be paid by the customers in a cashless transaction is also the same amount that will be credited to the account of the retailers. The money must be obtained electronically from the customer's account to the merchant's account (Burstein *et al.,* 2004)

CONCLUSION

From the findings of the study, the systems under the Point of Sale namely: the rapid scan systems, cloud based communication system, and electronic fund transfer at point of sale system are influential in the performance of the supply chain management of the retail sector. Moreover, the performance of the supply chain management of the retail sector in Tuguegarao City is high. In addition, there is significant relationship between the cloud based communication system and the performance of the supply chain management of the retail sector in Tuguegarao in terms of increasing service speed, increasing customer satisfaction and supply chain responsiveness and agility.

RECOMMENDATION

Based on the result of the study, it is recommended that the retailers need to constantly look at ways to enhance the customer experience and involvement in using the point of sale so that they will achieve their objective which is to improve client loyalty consequently expanded deals and other benefits. In addition, it is recommended that further study be conducted to consider different sectors of the economy such as manufacturing sector and other institutions like restaurants and hotels that are using POS. Also, corresponding research in the retailing sector can still be executed because of the possibility that those who declined will then approve to be surveyed and other retailers may adopt the systems under the Point of Sale wherefore the number of the respondents might increase which may also affect the results.

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