

SHOPPERS AND THE REAL CHALLENGE ON SUPERMARKET FRONT END

By

Samuel Martínez Fuster
MBA Program Industrial Management
Metropolitan Campus
Inter American University of Puerto Rico

Abstract

The task for this research was to observe, identify, plot and analyze all of the potential problems one as a shopper might perceive during the checkout process. In addition, identify if those problems were caused by supermarket operational flaws, shoppers themselves or check out process as a whole or if there is a combinational of multiple variables that may result in operational problems and situations at supermarket checkout areas. Two supermarket chains were chosen for this research: Supermarket A & Supermarket B. Stores analyzed where located at a close proximity radius to our normal grocery shopping routine. A total of 6 stores where analyzed; in which 3 were A supermarket stores and 3 were B supermarket stores.

The methodology used for this research had various stages. Identify a list of potential challenges that could be present at supermarket checkouts. Secondly, a thorough web and magazine research of articles related to problems faced on supermarket checkouts. Followed by supermarket visits to the previously mention stores in order to correlate online findings with the problems observed from actual store visits. This store visits were conducted on a period of 3 weeks. After all data was collected both from online research and actual inputs from store visits a Pareto Analysis was used in order to identify which are the most common or top issues observed, which of those issues where found and repeated on both chains and provide conclusions including recommendations that would address, enhance or correct the challenges observed during the research. The proposed recommendation is to implement a Serpentine/Bank line strategy to address and correct the biggest challenge/problem identified which was long/slow terminal lines and front end congestion using a two-month Pilot Program on 5 test stores of each supermarket chain within the Metropolitan area.

Keywords: supermarket, front end, checkout, Puerto Rico, purchase, shopper, cashier

Shoppers and the real challenge on Supermarket front ends

When visiting a supermarket whether as shopper/consumer to purchase groceries or in this case as an analyzer/observer looking for potential issues and or problems within the operation of the supermarket as a whole, numerous situations can be identified and or pointed out potential operational problems that most supermarkets have to deal on a daily basis. The task for this assignment was to observe, identify, plot and analyze all of the potential problems one as a shopper might perceive during the checkout process. In addition, identify if those problems were caused by supermarket operational flaws, shoppers themselves or check out process as a whole or if there is a combinational of multiple variables that may result in operational problems and situations at supermarket checkout areas.

Two supermarket chains were chosen for this research Supermarket A & B. The stores analyzed were those that were located on a close proximity radius to my house and that were included in my normal grocery shopping routine. A total of 6 stores of the metropolitan area were analyzed. The methodology used for this research had various stages. First a list was made up of what were understood to be some potential challenges that could be present at supermarket checkouts. This list was brought up from previous line of work at Johnson & Johnson which involves periodically store visits for inventory management, client relationship building, customer service, competitor's analysis and in-store marketing and sale strategies.

Secondly, a thorough web and magazine research of articles related to problems faced on supermarket checkouts. Following this research, a series of in-store visits were conducted on the previously mention stores in order to correlate online findings and the original list of potential problems with the problems observed from actual store visits for groceries. This store visits were conducted on a period of 3 weeks.

After all data was collected both from online research and actual inputs from store visits a Pareto Analysis was used in order to identify which are the most common or top issues observed, which of those issues were found on both chains and provide conclusions including recommendations that would address, enhance or correct the challenges observed during the research.

Since payments using credit and debit cards continue to grow and cash purchases continue to decline the first topic of the research was to address something called credit card skimming. As per a survey on consumer payment method preferences conducted by the Credit Counseling Professionals 80% of consumers use debit cards to pay for their everyday purchases like gas, groceries and meals. Only 14% of the respondents preferred using cash. According to MasterCard 2012 Well beyond Survey, 73% of American's say they use less cash today than 10 years ago. (ConsumerCredit.com, 2016)

Skimming is a method of stealing credit card information by using a small electronic device that scans and stores card data from the magnetic stripe. It can be done manually by a corrupt retail store employee who surreptitiously skims customers' cards, or by criminals who place a skimming device on top of a regular credit card reader (usually at gas stations or ATMs machines). Stolen credit card information can be used to make fraudulent purchases online or to clone new cards.

One credit card skimming breach was reported by the Denver Post stating that sources at multiple financial institutions say they are tracking a pattern of fraud indicating that thieves have somehow compromised the credit card terminals at checkout lanes within multiple Safeway stores in California and Colorado. (Wallace, 2015)

Three Safeway stores in Colorado were affected by card skimming breach. In all of the three stores, investigators concluded that the checkout lanes were tampered and thieves installed credit card skimmers into the stores credit card processing machines allowing them to steal people's card data and PINs. The reason why debit card account numbers and PIN's are so highly sought is because they can easily be converted to cash. A device called a mag stripe encoder can embed a stolen payment card number onto a blank magnetic striped card. Then, with the associated PIN, free cash can be obtained on the ATM machine. Dale Dabbs, CEO of identity theft protection service EZShield says that, "technology is making it easier for criminals to develop smaller, more effective skimming devices." (Acohido, 2012) As part of the online research we found that credit card skimmers can be purchased online and are also available on public eBay listings giving access of this type of equipment to regular people. Examples of eBay listings for credit card skimmers: (eBay, 2016)

Due to these situations in an effort to counter strike skimming and credit card frauds, big retailers and credit card issuers have improved their networks and expanded the use of chip based credit/debit cards. Although skimming is an example of a potential risk shoppers might find at a supermarket checkout, as part of our research none could be observed or confirmed happening on the stores visited. During the store visits and interviews to cashier employees none could provide information of an event where credit card skimming was present on their stores.

The only situation related to credit/debit card was that shoppers sometimes have personal issues with their cards when they are about to pay in which they are declined. These situations were observed on 2 of the supermarket visits which resulted in terminal line delays. We will be addressing issues related to cashier terminal delays further on the analysis.

Our recommendation for credit card skimming issues is that it's the consumer's responsibility to take the necessary precautions when paying at supermarkets, groceries, department store checkouts. Shoppers must be fully aware of this type of scenarios when shopping for groceries. Different security measures like paying with Google Wallet, Apple Pay, Samsung Pay and micro-chips on credit cards are some of the alternatives and security measures that are implemented to protect the consumer.

The second topic addressed on the research is related to body aches, specially concentrated on hand aches and in some instances cashier employees may suffer the disease called Carpal Tunnel Syndrome (CTS) due to the constant hours working standing, moving items across the terminal aisle and constantly using/clicking on the cash register machines. Occupational disease are those acquired at work. Statistics show an increase number of cases, victims like typists, operators, cashiers and many others with varied levels of involvement. It is composed of disorders affecting the upper limbs being recognized by the Ministry of Social Welfare. Among these diseases stands out for its occurrence CTS.

It has been considered a disease of the century, because its incidence is increasing by 40.8%. (Costa, Barros, Campos, Lima, & Barbosa, 2012) It is characterized by pain and paresthesia in the first 4 fingers and wrists, arm pain, weakness, numbness in the territory of the median nerve, preserving or not the palmar sensation and numbness in the median sensory distribution. The cashiers are a professional category with closely tendency to injury, since its activity helps the installation of CTS symptoms. This group performs manual tasks with repetitive movements, excessive workloads and relies on the lack of ergonomics features on their working environment. (Costa, Barros, Campos, Lima, & Barbosa, 2012)

A research conducted by the Salgado di Oliveira University in Brazil studied 13 cashier employees of both sexes, with workloads of 42 hours regularly at a grocery store in Recife, Brazil. Working hours are 7 hours and 20 minutes, split in 2 hours of work, 2 hours break and then nonstop 5 hours of work found that the pain can be justified also by the repetitive movements performed by professionals such as supermarket cashiers, running activities standing or sitting. (Pereira, 1995)The presence of pain, paresthesia in hands and wrists as a result of long working hours are signs and symptoms experienced by the subjects of the research conducted by the university, as well as psychological problems helping in the formation and installation of musculoskeletal problems.

The cause of symptoms may be repetitive movements, extended workloads, greater time spent standing up, excessive force, among others. Using as example the findings of the study by the Salgado di Oliveira University and other web articles that stated numerous examples of cashier employees having muscle and back problems, supermarket A & B cashiers were approached and interviewed in order to confirm if they were suffering from similar body ache issues from working as checkout cashiers.

Three out of the four cashier employees interviewed during store visits mentioned that they have suffered from body aches associated to their responsibilities as checkout cashiers. Shirley Aroud, cashier at supermarket A, said that “I frequently suffer from back pains due to so many hours working while standing up.” Francelys Desarden, cashier at supermarket A, confirmed she has had to file for (*licencia de incapacidad*) for one month due to sprained shoulder and muscle aches from moving items across her check out terminal that didn’t have an electric belt for item movement.” She also mentioned that “the constant punching of keys affects her fingers producing aches in her hand.”

Having confirmed that in fact both cases from online references as the one conducted by the University of Salgado di Oliveira and findings from local employee interviews we can conclude that there is a correlation between online and local research proving that some checkout employees like cashiers suffer from work related injuries and or diseases. The following are our recommendations:

1. Management conducts a survey to all cashier personnel about work related body aches
2. From survey results, implement changes on the workers schedule and environment for example:
 - a. Flexible working hours
 - b. 2 hours of working periods followed by mandatory 15 minute breaks
 - c. Flexibility to work standing up or sitting down on a provided chair
 - d. Working schedule of 3 days of work followed by a mandatory off day
 - e. Floating cashiers that serve as extra in the case someone needs to be replaced due to body aches
3. Implementing these recommendations will result in an increase in employee morale and humor, improvement in attitude towards management which will result in happier staff that will then transmit to happier customers and better customer interaction.

The next topic of our research covers the mix of products sold and advertised at the front end checkouts. Once the visits to local supermarket and grocery stores for this research were conducted, it was observed that most of the snacks and foods offered in the checkout aisles are non-healthy foods, thus for this research purposes of problems at supermarket checkouts we came to the conclusion that unhealthy foods offered at supermarket checkouts may contribute to health and obesity problems in Puerto Rico.

PR data as informed by the General Summary from the Department of Health for 2004-2013 shows that 67% of the PR population is obese and 32% of children's and adolescent are obese. (Sanchez, Rosado, Aleman, Morales, Rivera Rivera, & Torres Concepcion, 2014) While we searched for local and US studies supporting this hypothesis, the only study found was conducted in the UK. This case study from the UK used a cross-sectional survey of foodstuffs displayed at the checkout. Products displayed at or below children's eye level were designated as healthy, unhealthy or unclassifiable using the Food Standards Agency scoring criteria. Thirteen supermarkets from the three leading UK supermarket chains were selected on the basis of proximity to the town hall in Sheffield, England. Sheffield is a mid-sized urban center with a population of 580K in 2011. (Horsley, Absalom, Akiens, Dunk, & Ferguson, 2014)

The study in UK found that 89.5% of food products on display to children in supermarkets were unhealthy and that in most cases foodstuffs on display were at the upper end of the spectrum of unhealthy foodstuffs. Australian research has also demonstrated that children commonly request unhealthy foods during supermarket trips and that 70% of parents purchased at least one of the items their children requested.

What happens when you correlate both the UK and Australian research with actual data from observing the local supermarkets? All of the 6 stores that were visited for the purpose of this research included unhealthy food at front end checkouts which are mostly advertised for children and for impulse shopping. The criteria for unhealthy comes from reading the nutritional facts found on each items label. This means that 100% of the stores studied are promoting the sale of unhealthy foodstuffs at their front end checkout. Considering data for PR shows that 67% of the PR population are obese and 32% of children's and adolescent are obese, although there are numerous factors and variables that contribute to obesity in PR like fast food, genetics, purchase

decisions and so on, we can come to the conclusion that products advertised on supermarket checkouts can contribute to the obesity problem facing the Puerto Rican population. Not only is the product mix that's affecting as well, there is also the fact that it's the parents' decision to purchase this items for their kids once waiting in line at front end terminals.

Children's influence parents' purchases through "pester power", this has been recognized as an unwanted problem for parents and previous research has shown that the number of attempts children make to influence parents' purchasing decisions peak in the 3-5year age group. This age corresponds to a developmental stage at which children are at their most egocentric and are least able to delay gratification yet depend on parents for gratification of their desires. The problem with waiting on supermarket lines is that people are more likely to make impulse purchases when bored in line. "That is why supermarkets place tabloids, candy and gum in the checkout lane." (Klosowski, 2012)

Recommendations for this issue are:

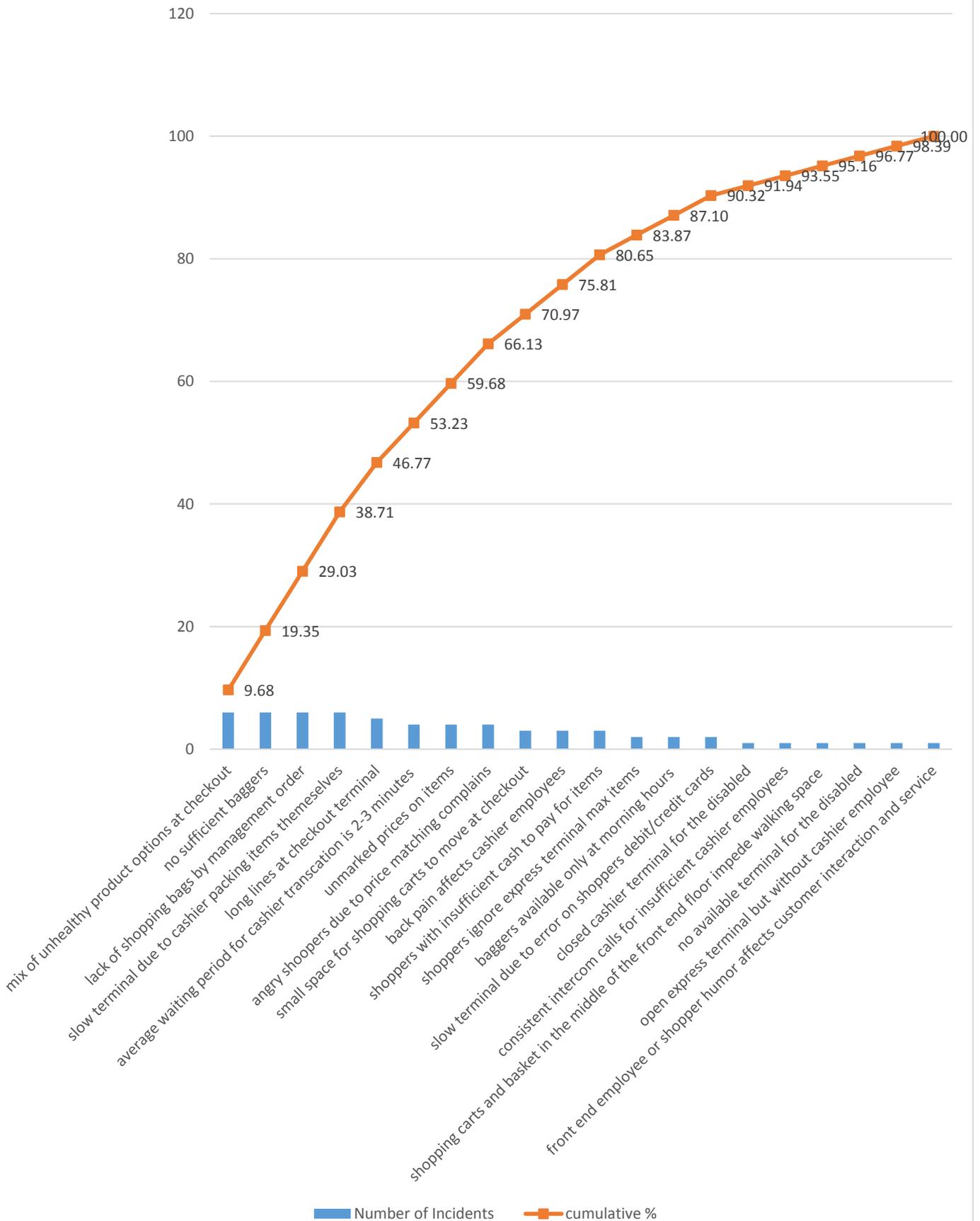
1. Supermarkets should include poster headers with nutritional info and calories identifying each item on sale at checkout aisles.
2. Supermarkets should create and advertise "The On-the-Go Healthy Station" at least 2-3 checkout aisles with only healthy and natural product options/mix.
3. Supermarkets should put on sale and advertise healthy product options at checkout aisles (ex: BOGO or 50% only for healthy items at front end checkouts)
4. Increase sale and awareness of healthy products at front end checkouts by: cashier employees reminding customers to "don't forget to pick up your healthy product from the "On-The-Go Healthy Station"

The final topics that will be addressed on this research are based on the actual findings from the six visits to supermarket A & B stores with close proximity to Cupey, San Juan PR. These findings will be taken from the Pareto table/graph which shows the top challenges/problems observed on 3 supermarket A and 3 supermarket B stores as well as employee and customer interviews.

Supermarket A Pareto Table and Chart:

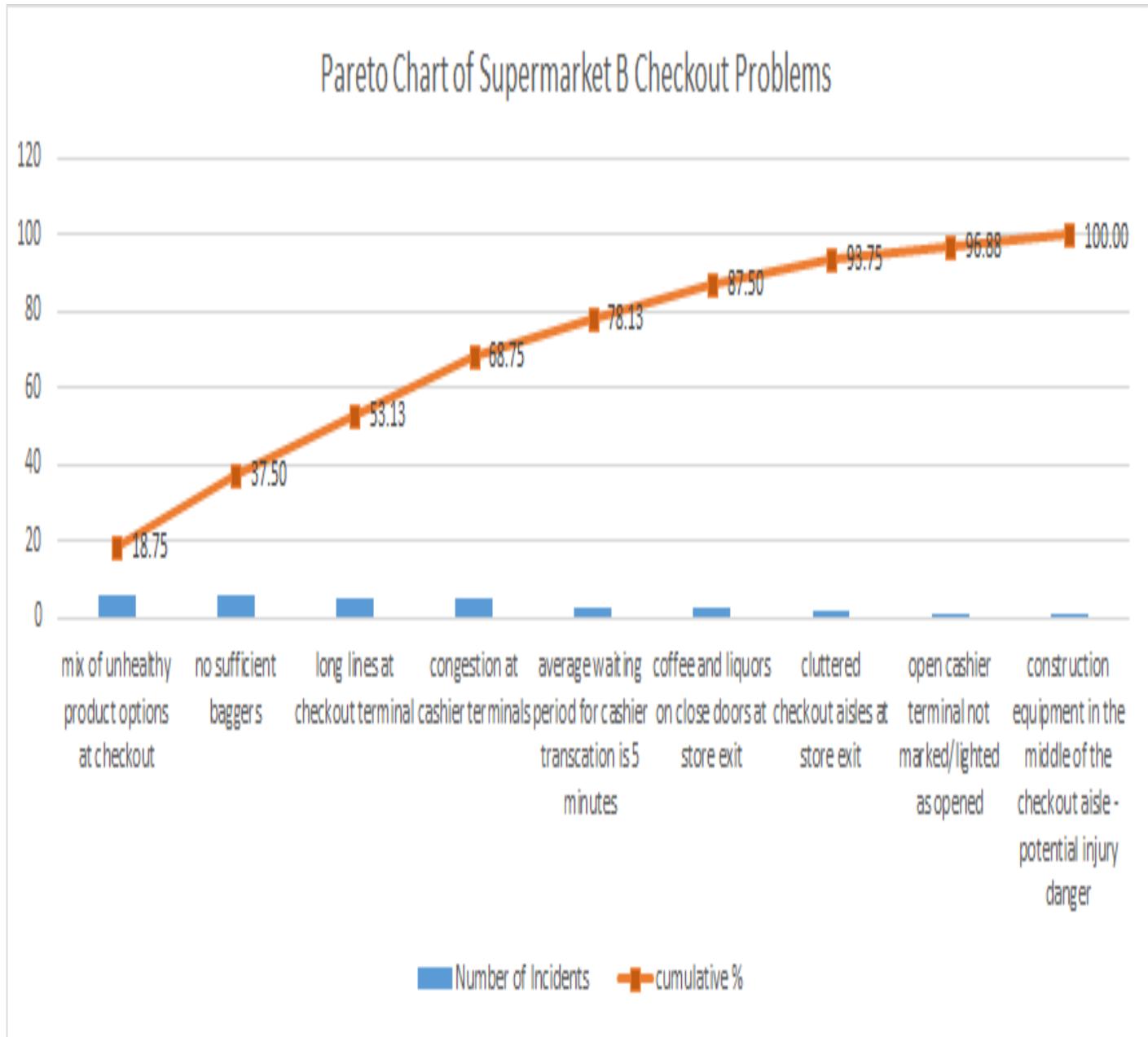
Problems found at Supermarket A Check Out Area	Number of Incidents	cumulative %	% of incidents from total
mix of unhealthy product options at checkout	6	9.68	9.68
no sufficient baggers	6	19.35	9.68
lack of shopping bags by management order	6	29.03	9.68
slow terminal due to cashier packing items themselves	6	38.71	9.68
long lines at checkout terminal	5	46.77	8.06
average waiting period for cashier transaction is 2-3 minutes	4	53.23	6.45
unmarked prices on items	4	59.68	6.45
angry shoppers due to price matching complains	4	66.13	6.45
small space for shopping carts to move at checkout	3	70.97	4.84
back pain affects cashier employees	3	75.81	4.84
shoppers with insufficient cash to pay for items	3	80.65	4.84
shoppers ignore express terminal max items	2	83.87	3.23
baggers available only at morning hours	2	87.10	3.23
slow terminal due to error on shoppers debit/credit cards	2	90.32	3.23
closed cashier terminal for the disabled	1	91.94	1.61
consistent intercom calls for insufficient cashier employees	1	93.55	1.61
shopping carts and basket in the middle of the front end floor impede walking space	1	95.16	1.61
no available terminal for the disabled	1	96.77	1.61
open express terminal but without cashier employee	1	98.39	1.61
front end employee or shopper humor affects customer interaction and service	1	100.00	1.61
total	62		

Pareto Chart of Supermarket A Checkout Problems



Supermarket B Pareto Table and Chart:

Problems found at Supermarket B Check Out Area	Number of Incidents	cumulative %	% of incidents from total
mix of unhealthy product options at checkout	6	18.75	18.75
no sufficient baggers	6	37.50	18.75
long lines at checkout terminal	5	53.13	15.63
congestion at cashier terminals	5	68.75	15.63
average waiting period for cashier transaction is 5 minutes	3	78.13	9.38
coffee and liquors on close doors at store exit	3	87.50	9.38
cluttered checkout aisles at store exit	2	93.75	6.25
open cashier terminal not marked/lighted as opened	1	96.88	3.13
construction equipment in the middle of the checkout aisle - potential injury danger	1	100.00	3.13
total	32		



In the case for the study we will focus on the problems that are found on both supermarket chain stores which are marked with grey on the Pareto charts for each chain. The challenges/problems that are repeated and affect both chains are:

1. Mix of unhealthy products at checkout aisles
2. Lack of sufficient baggers employees to help customers and cashier employees with packing their groceries
3. Long lines at terminals
4. Congestion and slow terminals

Most of the problems observed seem to be related to operational and administrative/management issues. This type of administrative problems can be summarized as congestion, long lines and slow terminals. Aside from the operational problems that were identified and which are the main focus of the study its recommendations and conclusions, some are related to the customers themselves. Based on employee interviews, observations and Pareto graph we can see that customers may “contribute” with slowing down the front end terminal. We can refer to the following examples taken from the Pareto chart and employee interviews:

1. Customers wanting price matching of items that can't be matched – supermarket A stores
2. Customers wanting to take more bags than the ones needed
3. Credit/debit card errors
4. Express lanes clogged because customers don't pay attention to the maximum items permitted – (Shirley Araud, cashier supermarket A)
5. Customers without enough or correct amount of cash to pay for purchase

In the everlasting search of customer satisfaction, customer loyalty and repeat purchase, grocers will go to great lengths in order to find the key element for customer happiness. As per the Pareto charts, we will concentrate on those problems in which are repeated on both store chains and that are marked in grey which were previously mentioned to concentrated on congestion, long lines and slow terminals. This is critical to the success of store's overall performance is that the front end area constitutes a shopper's final experience in the store and a retailers last, some might argue, best opportunity to wow a shopper. (Tarnowski, 2007)

Based on a survey of 300 retailers, conducted by Meridian Consulting Group and Shook Kelley on the grocery store front end's contribution to a customer's overall shopping experience it indicates that the top 3 most important variables that have the most impact on shopper's experience is produce (80%) of respondents, produce (74%) of respondents and the front end checkout (46%) of respondents. (Tarnowski, 2007) Thus, 46% of respondent's mentioned the front end checkouts as critical to their purchase decisions and repeat purchase behavior which confirms the importance of the front end checkout to the overall customer shopping experience.

In addition, Tarnowski articles specifies that more than 74% of respondents listed speed of checkout as very important as a measurement of performance upfront. (Tarnowski, 2007) His article also shows a "return ratio of customers" of 100%, indicating a high likelihood that shoppers would return to the location, based on their experience of the checkout wait time.

The Pareto chart as well as Tarnowski's article confirms that checkout management is key for customer loyalty, enhancement of the shopping experience, repeat purchase and customer loyalty.

During our store visits we interviewed some of the shoppers encountered while waiting in line. Aside from product prices, and friendliness of staff, based on shopper's feedback the most common thing that affects people when grocery shopping is long lines at front end terminals. Jean Carlos a cashier employee at supermarket B mentioned that "customers are happy when they see shorter lines."

We mentioned that problems that appeared on both Pareto charts are more specific to front end terminal operational management, which in fact are resulting in long lines, congested and slow terminals. There are also additional comments from employees that support the idea that front end problems are management operational issues. Comments from employees mention the fact that the main cause for problems at the front end checkout are related to:

1. Lack of staff – management decisions not allowing the appropriate amount of staff to efficiently manage the front end. Mainly due to reducing labor costs and shortening employee labor hours.
2. Pressure imposed by front end managers on cashier employees cause added tension and stress to the employee. Francelys Desarden, cashier at supermarket A mentioned that "she has suffered panic attacks due to anxiety and stress from managers and customers."
3. Employee absenteeism slows down front end operational efficiency as it adds to the problem of lack of staff and workers being submitted to working more hours. This affects employees' health as mentioned earlier on the research (ie: body aches), worker's performance and slows down the terminal.

Online research states that the main complaint by Kroger Co. customers is the long checkout line. (McLaughlin, 2014) Not only is Kroger dealing with this issue, based from the Pareto chart we can also identify that local supermarkets are dealing with the same type of operational problems resulting in long checkout lines.

Francelys Desarden, cashier at supermarket A also mentioned that “waiting in line is what bothers customers the most.” Lines can also hurt retailers. “Starbucks spooked investors last summer when it said long lines for its cold beverages scared off customers. “Wal-Mart, too, has said that slow checkouts have turned off many. And they are easily turned off.” (Barbaro, 2007)

Research has shown that consumers routinely perceive the wait to be far longer than it actually is. Research by The New York Times explains why customers hate lines. The basic idea is that when people are unoccupied, the wait in a line feels longer. In fact, their research suggests that “people overestimate how long they've waited in a line by 36%.” (Barbaro, 2007) Expectations further affect how customers feel about lines. “Uncertainty magnifies the stress of waiting, while feedback in the form of expected wait times and explanations for delays improves the tenor of the experience.” (Klosowski, 2012)

In recommendation to the main problems found on our research which are based on the Pareto charts which lead to front end congestion, long lines and slow terminals, our recommendation is that local grocery stores specifically focused on supermarket A & B chains should adopt the system called Serpentine line or single bank line strategy. This strategy was implemented by the Whole Foods Co, in NYC to address their challenge of long lines. “This has made them the top grocery seller in Manhattan with sales per store of \$42MM for last year.” (Barbaro, 2007)

Serpentine or single bank line refers to making all customers stand in one long snaking line, called a serpentine line, and serve each person at the front with the next available register. Research has proven that this method is about three times faster on average than the more traditional approach, and its what's done at most banks. It's important to mention that Whole Foods Co, reduced in half the wait time of its cashier terminal lines when it implemented this strategy. Following the success of Whole Foods Co in NYC, other supermarket chains started implementing this same strategy on their stores.

It's a fact that here in PR this type of strategy will take time in order for it to be accepted by the shopper. In order to minimize the impact and to analyze and measure its success our proposition is that both chains should develop a Pilot Program to test the effectiveness of the strategy. The Pilot Program can be implemented on 5 test stores from each supermarket chain for a period of 2 months. Stores selection criteria are based on store traffic, sale volumes and highest front end congestion of the Metropolitan area. Following the two-months period, results from the 5 test stores will be evaluated and compared to the rest of the stores within the Metro area. Once results are analyzed and validated against the rest of the stores, both chains can decide whether this operational change will be a strategy to pursue for the rest of their stores.

Conclusion

In the low-margin grocery business it is very important the return purchase from loyal customers. Taking in consideration the findings from local store visits, web research and Pareto analysis the most important operational issue to address by management is the smooth movement of terminals and the speed of cashier terminal lines. In order to address this operational issues and taking into consideration the success that Whole Foods Co has shown in New York the serpentine bank line strategy was proposed as an alternative to the regular cashier lines found on supermarkets front end's. As mentioned before, customers are happy when they see shorter lines.

Happier customers make employees happy. Employees with good humor means friendlier staff which will then translate in more customer interactions and improvement in business performance and sale growth. A Pilot Program would be the most appropriate route to take in order to verify the effectiveness of the serpentine strategy and the impact it will have on stores operational efficiency and business growth. Based on this study's findings and results, the following tactics are recommended to implement in order to tackle the challenges and opportunities that were identified from this research:

1. Pilot program of 5 stores of each chain to implement the serpentine/bank line strategy
2. Revision of the front end space to accommodate serpentine line structure by store
Operations Manager
3. Front End Managers re-train the front end staff for new line system
4. Store Managers provide detailed instructions of changes to shoppers
5. Implement a sign system or TV LED screens stating length of wait
6. Include floating staff in case they are needed in the front end checkout
7. Serve each customer at the front with the available representative

8. Administer a voluntary customer survey for feedback of new line system
9. Evaluate Pilot Program results and metrics
10. Based on test results, determine program feasibility of deploying in the rest of stores

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