# A STUDY OF SUCCESS FACTORS IN SUPERMARKET SELF-CHECKOUTS

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## ABSTRACT

This research was conducted to help grocery stores understand success and failure factors in grocery store self-checkouts. This research was conducted by the use of an online survey that was distributed by email, social media, and word of mouth. The results compiled were examined using SPSS statistical analysis software. In this analysis, it was thought that there would be correlations between variables, such as age, gender or the amount a typical customer spends when grocery shopping, and the scores given by consumers on certain aspects, such as the speed of self-checkout, employee assistance, and theft prevention measures observed at the respondents' preferred grocery store. However, upon further examination of the results of the survey and the utilization of statistical analysis, it was discovered that there were little to no correlations within those variables previously thought to be related, with the highest correlations coming from age and checkout preference and overall checkout rating and checkout preference.

**KEYWORDS:** Self-Checkout, Food Marketing & Grocery Stores

## INTRODUCTION

As grocery stores have evolved over time, from clerks picking every item for every customer to customers picking their own items and going through checkouts at the front-end of the store, the checkout has been a continuous source of friction with the customer. A customer may spend an hour in the store, but has little patience for back-ups (friction) when checking out. Solutions such as scan and bag your own groceries, to express lines for smaller orders, to click and collect (order online and pick up outside) have all been tried to varying degrees of success. One method, though, the self-checkout, has a significant amount of staying power. Self-checkout offers advantages to the consumer, in terms of "controlling your own destiny" as well as a perception that "doing it yourself" is preferred. Self-checkout offers advantages to the retailer as well, in terms of labor savings and an appearance that more checkouts are open in order to decrease friction on the front end. With a mutually-advantageous solution such as self-checkout, it would behoove grocery retailers to ensure their self-checkouts can be seen as a competitive advantage, and certainly not as a disadvantage. In this study, we are polling consumers as to what they like and dislike about self-checkouts, and studying correlations between variables.

The advantages and disadvantages of regular checkouts operated by cashiers are shown in Table 2.

## LITERATURE REVIEW

In 1992, when grocery stores first began to install self scanners, the employees and customers quickly became frustrated because the newly introduced machines proved to be more of a liability than an asset. The machines became problematic because of their complicated systems and employee lack of training surrounding them. Some problems that arise with self-checkouts include the inability to easily identify items in a consumer's basket such as unpackaged baked goods, produce items, items missing scanning tags and large or heavy items. (Hamacher, 2017)

In "Grocery Stores Experiment with Self-Scanning Systems in Augusta, Ga., area," by John Bankston, Bankston quoted one customer as saying, "I always come here -- there are  no lines at these machines," as she swiped her debit card at the self-checkout lane. "My husband and I come together, and one scan and one bags. It's pretty simple". (Bankston, 2001)This article found that older customers preferred to use a cashier due to being tired, not minding the social interaction, etc. However, Jenkins is 45 and prefers the self-checkout easy scans due to the lack of waiting in line.

In "Amazon Opens No Checkout, Cashierless Grocery Store" from the news source "Front Line News from the Field" relayed that the opening of the Amazon grocery store where buyers can walk out without having to go through a checkout process is changing the game. (Anonymous, 2018)However, there is a downfall to the idea of not having cashiers or self-checkout registers, and that is expressed by Stevenson, "The news alarmed analysts who fretted over the fate of cashiers." (Stevenson, 2018)Andrew Stevenson, managing director of the nonprofit JUST Capital, found that nearly 1.8 percent of the U.S. private sector workforce, about 2.3 million Americans, could be affected. That's roughly two-thirds of the 3.4 million cashiers in the United States, Stevenson wrote for Forbes.com". (Ibid)

More stores are beginning to introduce the concept of Scan-and-go technologies. The senior vice president of commerce and content practice at consulting group SapientRazorfish, Jason Goldberg, states "One reason is that stores are investing less in their self-checkout lanes and opting for scan-and-go technology that's less expensive because it doesn't need as much special hardware -- just an app or the scanners,". (Kaufman, 2018)In "Grocery Stores Begin to Add Self-Checkout Machines" by Gilbert Chan, Chan writes for the Knight Ridder/Tribune Business News and evaluates the growing acceptance of self-checkouts. Chan addresses an important point of competition when he writes, "For supermarkets, it's a critical strategy to stay competitive with nonunion rivals and retail giant Wal-Mart, which has emerged as the nation's No. 1 seller of groceries. The expansion of Wal-Mart's massive supercenters -- which incorporate a full-service supermarket into its regular discount store -- was a major reason grocery executives took a hard line during the four-month grocery clerk strike in Southern California this winter." Everyone is trying to figure out how they are going to compete with Wal-Mart". (Ibid)Walmart's self-checkout service area is more spacious than most grocery stores and has a significant amount of more easy scans; the lines tend to move faster due to the number of easy scans.

In reviewing one grocery chain's consumer reviews, we found the customers are quite clear on what they see as the issues with self-checkout. One example of this was when a customer was at a self-checkout and said, "I happened to have a plastic bag of sweet potatoes that had no item number on them. I placed them on the scanner and tapped produce and that it had no number. I signaled to the staff member at the self-checkout register for assistance. She told me I was all set, however, the computer said that I needed to re-scan the item. This happened over and over". (Consumer Affairs, 2017)She continues that the problem kept recurring and the single employee that was assisting kept her waiting as he was helping another customer. Another customer had a similar problem; upon checking out there were only two registers open accompanied with long lines topped off with employees standing around talking. The customer continued to state that she overheard others say, "It was a shame they couldn't read the situation". (Ibid)

**Table 1**

|                                             | Men | Women | 18-34 | 35-44 | 45-54 | 55-64 | 65+ |
|---------------------------------------------|-----|-------|-------|-------|-------|-------|-----|
| Self-checkout didn't work properly          | 30% | 32%   | 38%   | 38%   | 36%   | 33%   | 26% |
| The customer(s) ahead of me took too long   | 30  | 22    | 36    | 42    | 35    | 27    | 21  |
| I needed help, but the staff was not available | 20 | 2     | 30    | 32    | 29    | 23    | 16  |
| It was hard to figure out how to use        | 14  | 14    | 10    | 7     | 9     | 12    | 18  |

In addition, another customer simply put "First there are almost never enough registers open! I think the most I've seen open at a time was 5. When there is an advertised product, and you run out. Why can't you have rain checks at the registers?". (Consumer Affairs, 2017)Through further research, other issues were addressed. "The previous bagger packed a 20-pound cold bag too heavy. It weighed 20 pounds. She should have double bagged it. Too much in a hurry. Really need bagging class. I have shopped in that store since it opened but things have changed there". (POC, 2018) The fact that people are concerned with how the employees are handling their items, may show a reason why people want to use the self-checkout and could pose the reasons why self-checkout is under increased scrutiny by consumers. Overall, the underlying issues at checkout seem to be long waiting times, not enough employees on the registers, and malfunctions with self-checkout.

In a survey done by "Consumer Reports" with over 20,000 respondents, titled "The Pros and Cons of SuperMarket Self-Checkout" they conducted a survey on "Why self-checkout can be annoying." The article stated, "The mere presence of self-checkout, however, doesn't ensure satisfaction. Three out of 10 respondents who used self-checkout complained that it didn't work properly; 27 percent were ticked off that the customer ahead of him/her dawdled. Twenty-two percent were irritated because they couldn't find a staffer at the front end—industry-speak for the checkout area—to resolve a problem, while 14 percent confessed that they had a hard time simply trying to figure out how to navigate the system". (Consumer Reports, 2018)This report repeats the underlying issues previously stated: the machines malfunction, there is a long wait line, there seems to be a shortage of employees to assist customers, and additionally, some people simply don't know how to use it. Table 3 illustrates some of the results that Consumer Reports found.

In a survey conducted by the NCD Group from Statista "How can Self-checkout be Improved.", most people seem to agree the three improvement areas are a larger bagging area, an attendant that is always readily available for assistance and make it easier to purchase product items sold by weight. Figure 1 shows their findings.

In addition, it is important we understand why consumers choose to utilize self-checkout. Figure 2 is a table by the NCD group on "What Consumers like about Self-Checkout."

One study investigated and analyzed the way in which consumers are adopting self-service checkout systems in stores and how it affects the in-store environment and the overall consumer experience. The use of semi-structured face to face interviews aided in the understanding of how consumers interact with self-service checkout systems and how they feel about the process. The results of this study showed that many consumers feel they are socially obligated to use the self-service checkouts in order to appease others. (Bulmer, Elms, & Moore, 2018)

Another study examined the impact self-service checkout systems have on inventory shrink and customer theft within stores in which they exist. Through the use of recent marketing research surveys, it was proposed "that up to one-third of customers regularly steal when using [self-service checkout] in supermarkets". (Taylor, 2016).

The article, "Walmart launches mobile checkout" by Daniel Keyes, describes how Walmart is testing its "Check Out With Me" program. The program allows consumers to check out with a roaming store associate who has a device that can swipe their credit card and print a receipt. Walmart currently has this program in effect in the Home and Garden section. They chose these sections because this is where large products are purchased that are very difficult to bring to the cashier or easy scan. Even though this is the only area Walmart currently has the program in stores, there is a possibility for this to be storewide in the future. (Walmart, 2018).

A page on one grocery store's website explains how consumers can now avoid in-store shopping completely. This grocery store now offers to pick up at their Market Bistro store in Latham, New York. Consumers need to create an 'Instacart' account, pick the products they want, pay online, and then choose a time to pick the groceries up. This concept leads to less congested check-out lines, while still providing the service of grocery shopping to consumers. (Pickup, 2018).

In another study, it was determined that consumers were more likely to use a self-checkout when they believe that there will be a short wait time. This study also determined that consumers who have already used a self-checkout machine previously, find it to be more reliable and compatible than a consumer who has never had an experience with a self-checkout machine. (Leng & Wee, 2017) One study discussed the location of UPC codes on products and their correlation with the time spent at a self-checkout machine. The research conducted in this paper discusses two different UPC placement techniques as well as two different scanning technologies. This research could be useful to the study of self-checkout scores at grocery stores because UPC placement may affect a customer's checkout experience. (Mumani, Stone, & Wang, 2018).

Further research focuses on the direct relationship between customer satisfaction and the use of self-service technologies (SSTs), such as self-checkout machines. This information is similar to the research being conducted in our study and will provide useful data to gain insight on various factors that may affect a customer's satisfaction level when using SSTs.(Effect of Self-checkout, 2018) Further research focused upon when certain grocery stores first began implementing self-checkout lanes into multiple stores in 1995. The store estimated that about 30% of customers were using the self-service checkout in one store and planned to upgrade the point of sale system chain-wide, based on store size and shopper demographics. The main approach was to enhance customer service, especially those purchasing only a few items. It targets consumers who have a difficult time standing in line and gives them an alternative option when it comes to checking out of grocery stores . (Zimmerman, 1995) The further literature review covers Sam's Club's new mobile app and its effort to speed up checkout during the holiday season and increase shopping traffic. The app allows customers to completely skip the checkout line and show a digital receipt to a clerk at the door. The program, called 'Scan & Go' will be available in all of Sam's Club locations and even showed a spending increase by app users compared to non-app shoppers. (Amato-McCoy, 2018).

## RESEARCH METHOD

Research is necessary to determine what customers are experiencing in grocery store self-checkouts. In order to conduct such a study, information from consumers needs to be collected that accurately construes the opinions about certain aspects of the self-checkout systems in various grocery stores and their competitors. Collecting such information, including demographic information and typical consumer spending, will aid in determining correlations between variables that are being questioned. This research may identify an opportunity for grocery stores to either improve or discontinue self-checkout/self-scanning systems in their stores.

This research will be done through the use of an online anonymous survey to collect respondents' answers to be used for further interpretation of the customer experiences at self-checkout. Questions to be posed are customer overall feedback, why consumers are using self-checkout and what they like or dislike about their checkout experience. Three other areas of research include the speed or time it takes for a consumer to use the self-checkout machine, the amount of employee assistance at the machine, and finally, the prevention of theft measures that consumers observe when using the self-checkout machines. Through the use of this research, it should be possible to find an answer to the most important

question, what can grocery stores do to improve self-checkouts and provide a better customer experience than its competitors.

In addition, the surveys asked demographic characteristics, such as age and gender, as well as the typical amount of money spent when visiting the participant's grocery store of choice, plus the rating (based on a Likert scale) given by the participant about certain aspects of the self-checkout system at the store the participant shops at most frequently. The results to be analyzed were based upon speed/time, employee assistance, and theft protection. These three variables of self-checkout systems and the correlation to other variables, such as gender, the amount of money a consumer spends while grocery shopping, or how frequently a consumer grocery shops, were compared and analyzed for correlations.

## DATA COLLECTION

The survey platform Google Forms was used in the collection of the data. The population consisted of anyone who has had  experience with self-checkout systems at grocery stores. The sample population consisted of those who completed the survey. The survey was sent by email to college students, with an expectation they would use the snowball method to reach a network of shoppers in one regional geography. The survey was also shared on social media, such as Facebook and Twitter, and was also shared to a teammates family member's place of work. The researchers also encouraged people to take the survey through word of mouth. The sampling method used in this research was a chain referral nonprobability sample survey. The sample size consisted of 105 participants; the sample frame consists of a master list of those who completed the survey and was then narrowed down to respondents who chose grocery store as their preferred destination of shopping, which was determined to be 56 participants. In order to validate the sample, the survey results were examined for correlation. The goal of the data collection is to ensure that there is a representative sample that can be extrapolated to a general population, so it was imperative that this sample and method of data collection fit this goal.

The research conducted was exploratory, as our timeframe did not permit causal research. The question sections in our survey read as follows: "What are the main causes of  self-scan being unsuccessful? If you don't shop at the grocery store, where do you shop most? Why does one have a preference for a cashier instead of an easy scan? What is your family size?".

## RESULTS AND ANALYSIS

Upon collecting information through the use of an online survey administered to the sample population, results were expected to be found by the discovery of correlations between variables such as demographic information and consumers' ratings on specific aspects of the self-checkout system at the grocery store. It was anticipated that these correlations would be useful in determining actions that grocery stores could take in order to improve consumers' scores of the self-checkout system at grocery store  locations. Data analysis tool SPSS was used in an attempt to find correlations between variables found from the results of the survey administered to the sample population.

Figure 3 shows a fairly slight correlation of.334 between age and checkout preference. In the survey that was administered, participants were asked to select the age range in which they belong and select if they prefer self-checkout or traditional checkout when grocery shopping. This slight correlation can be seen where the variables do not exhibit a straight-line relationship but are in clusters to show that most of the same age groups prefer the same checkout experience.

Figure 4 shows a slight correlation between the overall rating of the self-checkout system and the participants' preference of checkout, either self-checkout or traditional checkout. Again, the correlation between the two variables fails to exhibit a straight-line relationship, meaning they are not systematically related to one another. It can be speculated that a consumer's preference for either self-checkout or traditional checkout may affect their rating on the overall experience of self-checkout. If they do not prefer self-checkout, but use it anyway, they may already expect it to be a bad experience or vise-versa.

Figure 5 shows evidence of little to no correlations found between variables that were previously thought to relate to one another in hopes to find answers to the three main research objectives, speed, employee assistance, and theft prevention. If correlations were found among these variables it would have been possible to relay this information to grocery stores, so strategies could have been implemented to improve specific aspects of the self-checkout system in-store locations. For instance, if there were to be a strong correlation found between gender and employee assistance, it could have been denoted to the grocery store to enforce employee assistance to a certain gender when self-checkout systems are being utilized by consumers.

In order to look specifically at one group of competitors, the participants were asked to identify their primary grocery store in this particular region (northeastern United States). Among the choices were: Price Chopper, Hannaford, Walmart, and ShopRite. The participants were also asked to rate the self-checkout system at the store where they usually shop in regards to the overall experience, speed, and employee assistance. This data was compared using pie charts, which can be accessed below and is shown in Figure 6. Among all three grocery stores, a rating of 4 is most popular in the overall experience of the self-checkout system. However, Hannaford and Walmart seem to have a higher amount of ratings of 5, while Walmart has 0 ratings of 1 and many less ratings of 3 compared to the other stores.

Figure 7 shows Walmart received more ratings of 5 in the category of speed than any other grocery store.

Figure 8 shows Price Chopper scored higher versus Walmart in employee assistance. This shows that Price Chopper may have a strength in this category over competitors and should continue to motivate its employees to achieve this satisfaction from customers.

Figure 9 shows Walmart received poor ratings in theft prevention, especially compared to Price Chopper.

## LIMITATIONS AND REPLICATION INFORMATION

The limitations of this research include the restricted amount of time to collect data and properly analyze it. Other limitations include that only survey data and secondary data was collected, i.e. there were no other methods used in this study to collect data. The survey was inconclusive in determining any strong correlations amongst the variables. If this study were to be replicated, a re-examination of the questions and information collected from the survey is necessary. Other methods of data collection, such as the use of face-to-face interviews, would be appropriate in order to conduct a better investigation of the true reason(s) as to why grocery store's self-checkout system scores might be lower than that of the competition.

## REFERENCES

1. Amato-McCoy, D. M. (2016) "Sam's club embraces mobility: new app allows shoppers to skip the checkout line." Chain Store Age, 92(7), 24.

   http://go.galegroup.com.ezproxy.siena.edu:2048/ps/retrieve.do?tabID=T003&resultListType=RESULT_LIST&searchResultsType=SingleTab&searchType=BasicSearchForm&currentPosition=3&docId=GALE%7CA475225882&docType=Article&sort=Relevance&contentSegment=&prodId=PPSB&contentSet=GALE%7CA475225882&searchId=R2&userGroupName=nysl_ca_siena&inPS=true

2. Anonymous. (2018) "Amazon Opens No Checkout, Cashierless Grocery Store." SE: Industrial & Systems Engineering at Work, 1 Mar. 2018, eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=5&sid=8f96ef5c-ce72-493d-9d5a-57e35110ff56%40sdc-v-sessmgr01

3. Bankston, John. (2001) "Grocery Stores Experiment with Self-Scanning Systems in Augusta, Ga., Area." Newspaper Source, 14 Aug. 2001, eds.b.ebscohost.com/eds/detail/detail?vid=2&sid=0889496b-f6bd-4ffc-bb0c-1ed01c1135d0%40sessionmgr103&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=2W60904342637&db=nfh

4. Bulmer, S., Elms, J., & Moore, S. (2018)Exploring the adoption of self-service checkouts and the associated social obligations of shopping practices. Journal of Retailing and Consumer Services, ISSN: 0969-6989, Vol: 42, Page: 107-116.

   https://www-sciencedirectcom.ezproxy.siena.edu/science/article/pii/S0969698917307348

5. Business Insider (nd). (2018) "Walmart launches mobile checkout" Retrieved December 2, 2018, from https://www.businessinsider.com/walmart-launches-mobile-checkout-2018-4

6. Chan, Gilbert. (2004) "Many Sacramento, Calif., Grocery Stores Begin to Add Self-Checkout Machines." Business Insights: Essentials, 23 Mar. 2004,

   bi.galegroup.com/essentials/article/GALE%7CA114501157?u=nysl_ca_karigon

7. Consumer Affairs. (2017)"29 grocery store Consumer Reviews and Complaints." Consumer Affairs, 2017, www.consumeraffairs.com/retail/price-chopper.html

8. Consumer Reports. (2018)"The Pros and Cons of Supermarket Self-Checkout." Product Reviews and Ratings - Consumer Reports, 2018, www.consumerreports.org/cro/news/2015/04/the-pros-and-cons-of-supermarket-self-checkout/index.htm

9. D'Innocenzio, Anne. (2018)"Why Scan-and-Go Technology Is Surging in More Grocery Stores." Inc.com, Inc., 23 Feb. 2018, www.inc.com/associated-press/supermarket-chain-stores-new-technology-scan-go-customers-amazon-phone-app.html

10. Hamacher, Adriana. (2017)"Future - The Unpopular Rise of Self-Checkouts (and How to Fix Them)." BBC News, 10 May 2017,

    www.bbc.com/future/story/20170509-the-unpopular-rise-of-self-checkouts-and-how-to-fix-them

11.   Kaufman, Steve. (2018)"Scan and Go: It Feels Like Stealing."VMSD Special Reports.

http://www.vmsd.com/content/scan-and-go-it-feels-stealing

12.   Leng, H. K., & Wee, K. N. L. (2017) "An examination of users and non-users of self-checkout counters." International Review of Retail, Distribution & Consumer Research, 27(1), 94–108.

https://doi-org.ezproxy.siena.edu/10.1080/09593969.2016.1221842

13.   Mumani, A., Stone, R., & Wang, Z. (2018) "The effect of scanning technology and UPC

14.   placement on supermarket self-checkout." Packaging Technology and Science, 31(2), 83–96.

https://onlinelibrary-wiley-com.ezproxy.siena.edu/doi/full/10.1002/pts.2355

15.   NCD Group; NCR Corporation. (2014)"How Can Self-Checkout Be Improved?" Statista, 2014,

www-statista-com.ezproxy.siena.edu/statistics/326334/consumer-suggestions-for-improving-self-checkouts-in-supermarkets-worldwide/

16.   Pickup. (2018) Retrieved December 2, 2018, fromhttps://www.pricechopper.com/pickup

17.   POC. (2018)"Price Chopper - Bagging Issues May 06, 2018 @ Pissed Consumer."

18.   Pissed    Consumer,    6    May    2018,    price-chopper-grocery-store.pissedconsumer.com/bagging-issues-201805061249188.html

19.   Stevenson, Andrew. (2018)"Amazon Go and the 2.3 Million Cashiers it could Leave Behind."Forbes.com.

https://www.forbes.com/sites/justcapital/2018/02/01/amazon-go-and-the-2-3-million-cashiers-it-could-leave-behind/#fb41a557bcc7

20.   Taylor, E. (2016)"Supermarket self-checkouts and retail theft: The curious case of the SWIPERS."Criminology & Criminal Justice: An International Journal, 16(5), 552–567.

https://doi-org.ezproxy.siena.edu/10.1177/1748895816643353

21.   Zimmerman, D. (1995) "Price Chopper to install self-scanners in stores."Supermarket News, 45(10), 17+. Retrieved from

http://link.galegroup.com/apps/doc/A16629875/PPSB?u=nysl_ca_siena&sid=PPSB&xid=6524fc91

**APPENDICES**

**Table 2: Regular Checkout Advantages and Disadvantages**

| Location of Factor | Favorable Factor | Unfavorable Factor |
|---|---|---|
| Internal | <u>Strengths</u><br>• Somebody knows all the product look-ups (PLUs) and how to properly weigh produce<br>• Natural sorting of sizing of products and temperatures-cashier is trained to separate certain products together<br>• Ability to get out of the store without paying comes with the inability to see what you are paying for ---you can watch on screen what you are paying for and what prices are being charged | <u>Weaknesses</u><br>• Disengaged cashiers<br>• Backup and friction at checkout leading to long lines<br>• Low dependability on technology being available to use |
| External | <u>Opportunities</u><br>• Development of technology<br>• Launch new and more efficient check out stations to improve consumer experience<br>• With more easy scan checkouts labor will decrease and the speed of consumers time spent in the store will decrease | <u>Threats</u><br>• Competition that already has this quick and easy check out system<br>• Replacing human labor<br>• Cost of new and improved technology |

**Table 3: Consumer Reports Results (Consumer Reports, 2018)**

|  | Men | Women | 18-34 | 35-44 | 45-54 | 55-64 | 65+ |
|---|---|---|---|---|---|---|---|
| Self-checkout didn't work properly | 30% | 32% | 38% | 38% | 36% | 33% | 26% |
| The customer(s) ahead of me took too long | 30 | 22 | 36 | 42 | 35 | 27 | 21 |
| I needed help, but staff was not available | 20 | 2 | 30 | 32 | 29 | 23 | 16 |
| It was hard to figure out how to use | 14 | 14 | 10 | 7 | 9 | 12 | 18 |



**How can self-checkout be improved?**

- A larger bagging area — 45%
- An attendant is always available to assist me if I need it — 43%
- Make it easier to purchase produce or items sold by weight — 37%
- Easier way to scan bulky or heavy items — 33%
- Reduce the amount of instructions it gives me — 22%
- Make it easier to scan mobile coupons from my phone — 17%
- Make it easier to use, like my IPad, tablet, or smartphone — 15%
- Make the SCO unit look more modern — 11%
- Personalize the checkout experience for me — 11%
- Nothing — 11%
- Some other improvement — 3%

Share of respondents

Sources
NPD Group; NCR Corporation
© Statista 2018

Additional Information:
North America; Asia; Europe; NPD Group; 2014; 2,803 respondents
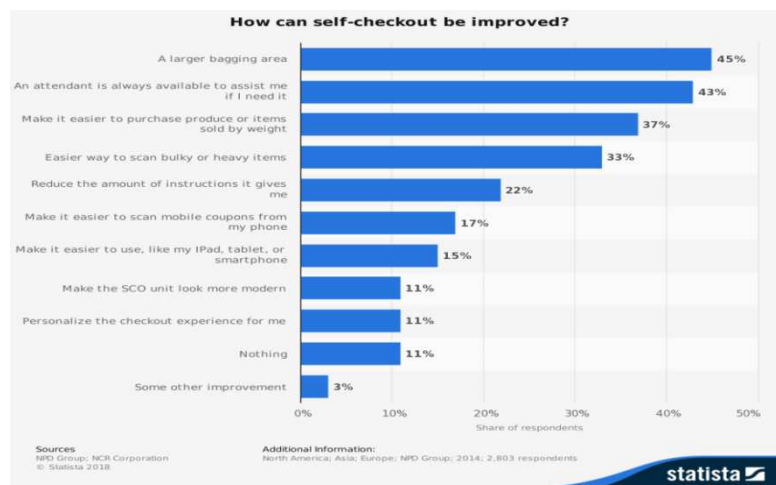
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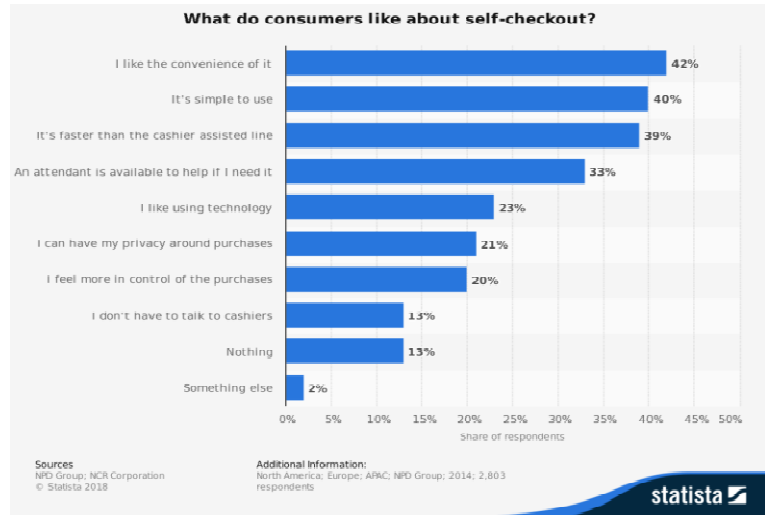**Figure 1: Statista's Survey Findings (NCD Group Statista, 2014)**

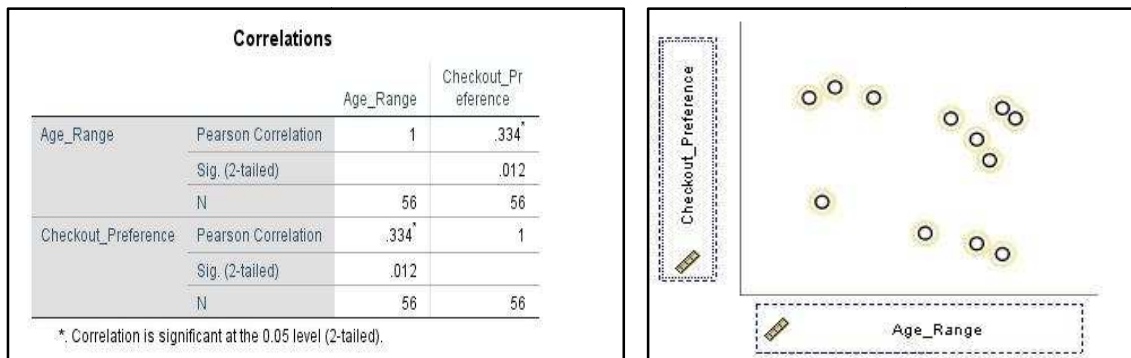**Figure 2: Survey Results for why Consumers like Self-Checkout (NCD Group Statista, 2014)**



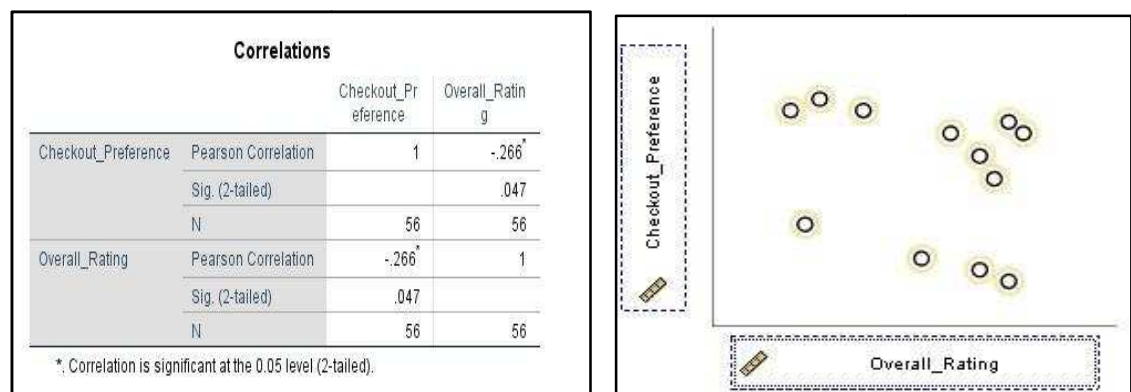**Figure 3: Correlation Between Age and Checkout Preference**



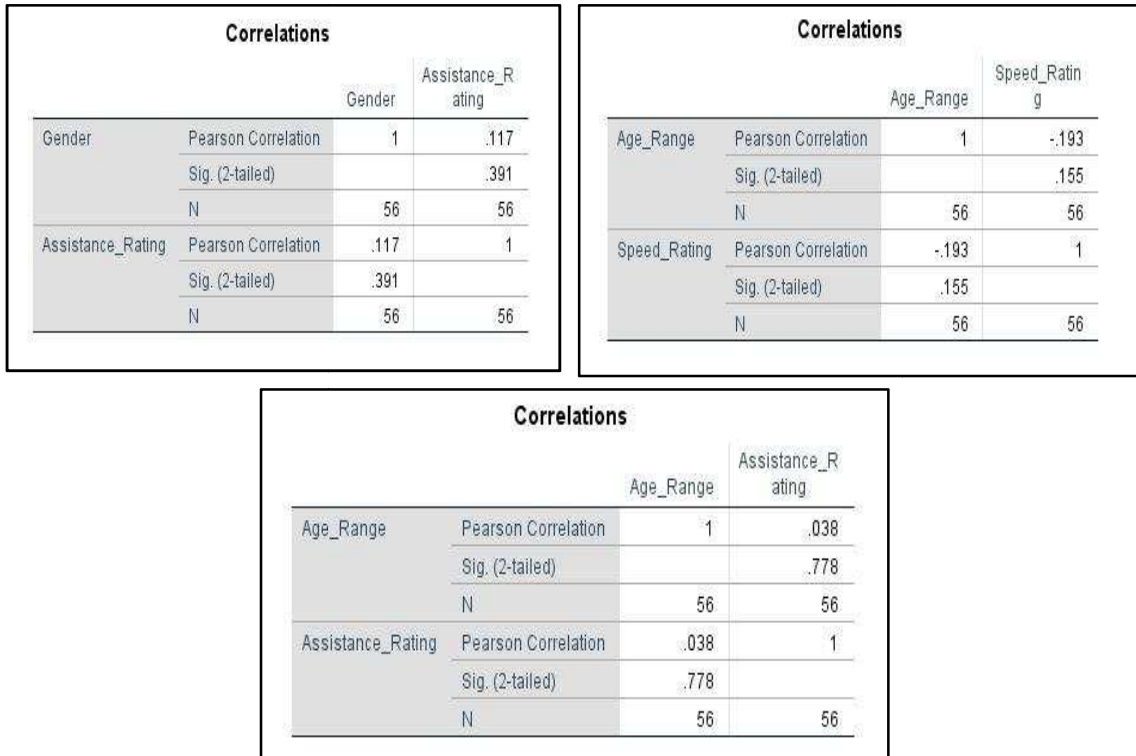**Figure 4: Correlation Between Overall Self-Checkout Rating and Checkout Preference**
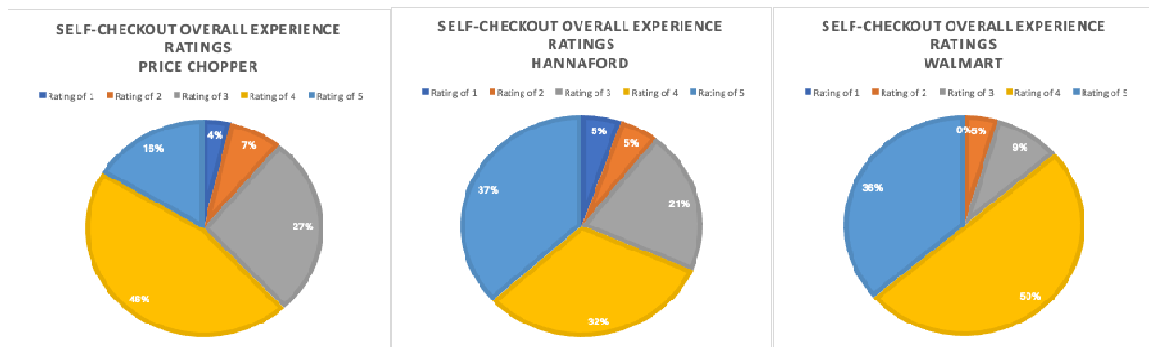
**Figure 5: Further Variable Correlations**
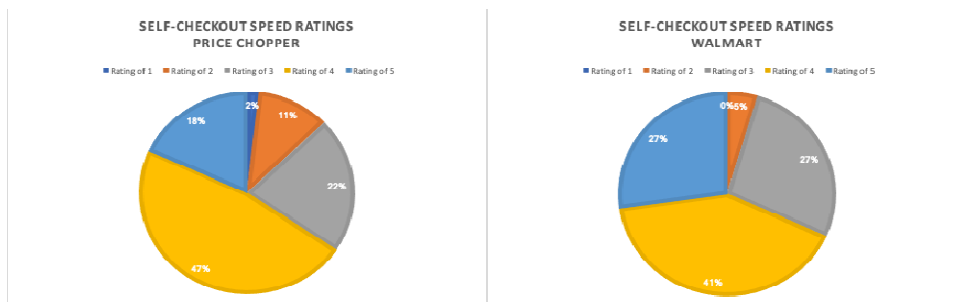


**Figure 6: Individual Store Ratings**



**Figure 7: Speed Ratings Between Price Chopper and Walmart**

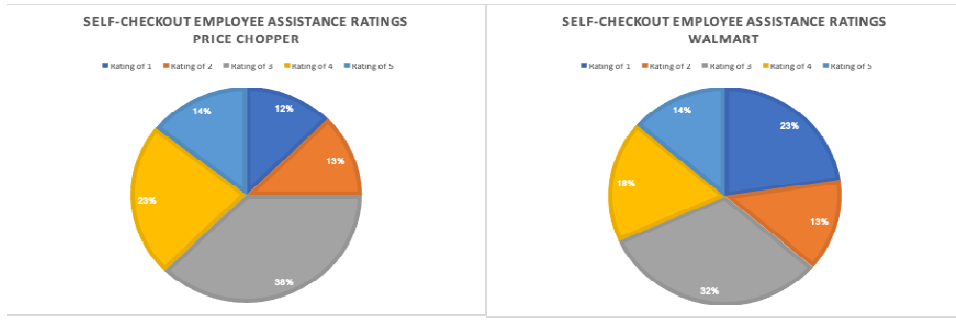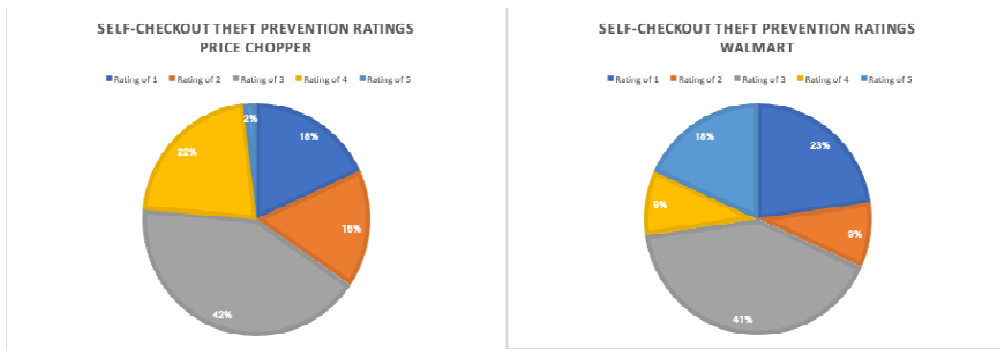**Figure 8: Employee Assistance Ratings Compared Among Price Chopper and Walmart**



**Figure 9:Theft Prevention Ratings Between Price Chopper and Walmart**