CUSTOMER PERCEPTION TOWARDS THE ADOPTION OF SELF-SERVICE CHECKOUT SYSTEM IN THE CONTEXT OF "KORZINKA" UZBEK GROCERY RETAIL CHAINS

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Abstract. *This article investigates the consumers' perceptions about the adoption of the recently launched self-service checkout system in the "Korzinka" supermarket retail chains in Uzbekistan. The UTAUT model's key constructs are employed as the major framework to explain the adoption of various technologically-related behaviors. The antecedents included are performance expectancy, effort expectancy, social influence, and facilitating conditions.*

This study is among the first that examines the aspects that affect customer perception about the adoption of self-service checkout system in the Uzbek retail market. The results of this research may assist retail businesses in general to better understand how customers perceive the aforementioned system and make informed decisions about implementing as well as optimizing this technology.

Keywords: *Self-service checkout system, unified theory of acceptance and use of technology, behavioral intention, performance expectancy, effort expectancy, social influence, facilitating conditions*

Introduction.

The rapid advancement of technology, along with the communication methods, have had a substantial influence on the dynamics of consumer-retailer relationships. In order to enhance cost-efficiency, value, maintain competitiveness in global markets, and customer satisfaction, retailers are increasingly implementing a range of self-service technologies (SST). The current phenomenon has been driven by recent technological innovations that are drastically changing the future course of the retail sector (Williams, 2019), facilitating the seamless integration of physical and digital sales channels (Rigby, 2011). Self-service checkout systems (SCS) are a type of innovation that has gained significant popularity in numerous industrialized countries.

It is critical to mention that grocery retail chains in developing countries, such as Uzbekistan, encounter a deficiency in the implementation of SCSs and a comparatively lower rate of customer usage in contrast to developed countries (Sharma, et al., 2017). This finding further supports the existing body of research that has been undertaken in several developing countries, with a specific focus on Uzbekistan. Obviously, there is a lack of understanding on the main factors that influence the acceptability and adoption of SCS in countries with rising economies. Korzinka, a grocery retail chain in Uzbekistan, has recently put the aforementioned technology into practice among its several large branches to enjoy the benefits of SCS, but facing the task of efficiently promoting this system. Thus, the current study aims to examine the moderating effects of the SCSs on consumers' perceptions and to address the principal elements that affect users to consider the system.

THEORETICAL BACKGROUND

Customer Perception

Consumer perceptions can be seen as the cognitive process by which individuals actively seek and evaluate information related to market conditions, with the aim of developing an understanding of the market and its offerings (Sahaf, 2019). Consumers actively form and modify their perceptions of various alternative products and services, which then influence their attitudes and preferences towards those things. According to Schiffman and Kanuk (2019), the influence of perceptions on consumer decision-making is emphasized over factual information, hence highlighting the significance of perceptions for marketers. Marketers have recognized that the likelihood of consumers purchasing products and services is significantly higher when they possess distinct and favorable perceptions, as opposed to those with ambiguous or unfavorable images. Consequently, marketers have realized the importance of comprehending the consumer's perceptual process in order to develop more effective strategies for fostering favorable perceptions of their offerings.

Unified Theory of Acceptance and Use of Technology (UTAUT) and the study Conceptual Framework

The UTAUT model suggests that performance expectancy, effort expectancy, social influence, and facilitating conditions related to the technology can predict an individual's attitude to adopt and use new technologies (Yogesh K. Dwivedi, 2017). Performance expectancy, linked to the construct of perceived usefulness in the TAM, is an individual's perception of how a technology will enhance their job or task execution (Venkatesh, et al., 2012). This concept pertains to the relationship between the perceived utility, efficiency, and productivity enhancements that customers feel when utilizing new technological advancements. Chiu and Wang (2008) found that users are more likely to adopt a new information system if they perceive it as user-friendly and requiring less time and effort for learning.

Extensive study in several academic disciplines shows that the degree of performance expectancy is a key factor in influencing an individual's decision to adopt a certain technology and subsequently use it in practical ways. The study done by Lee and Lyu (2019) revealed that people who see positive advantages from using SCSs are more likely to perceive a higher level of service quality and consider it as less risky.

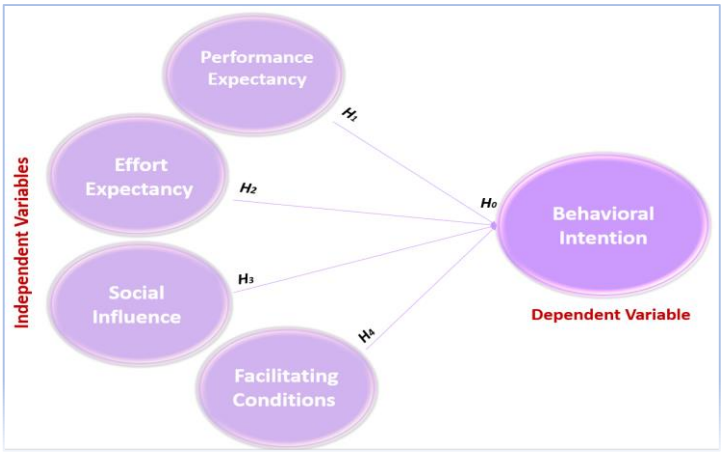


Figure 1: *Conceptual Framework* - ***Behavioral Intention and Its Antecedents***

The hypotheses and their explanations are presented in the paragraphs to follow.

H1: Performance expectancy is positively and significantly related to consumers' intention to use SCS.

Effort expectancy is one more component of the UTAUT model, which evaluates a user's perception of the level of easiness associated with using information technology. This construct has similarities to the term of perceived ease of use within the TAM framework. The availability of technology in an easy-to-use way acts as an encouragement for shoppers, resulting in an increased probability of employing and integrating the technology into their practices (Alam, et al., 2018). Effort expectancy and the intention to employ a technology are positively correlated. Venkatesh et al. (2003) believe that the early adoption of technology is highly influenced by the perception of effort expectancy. However, this impact tends to diminish over time. This implies that the perceived level of effort required to utilize a technology may significantly impact the intention to embrace it during the initial stages of its introduction. However, the impact of technological adoption diminishes with time as people get more acquainted and accustomed to using the technology. Given the current emphasis on the first stage in research related to the adoption of technology, it is very likely that there exist causal connections between people' perceived ease of use and their intention to engage in certain activities.

H_2: Effort expectancy is positively and significantly related to consumers' intention to use SCS.

The term of social influence refers to the degree to which an individual perceives that significant individuals in their life encourage the adoption of a new information system. The concept has similarities to subjective standards as proposed in the theory of rational conduct (Venkatesh, et al., 2012). Lee et al. (2019) argue that individuals are more likely to be sensitive to the influence and persuasion of their close relationships when they recognize the need of adopting new technologies. Social influence has been shown to substantially enhance behavioral intention in critical conditions but its impact is rather limited in voluntary situations (Venkatesh, et al., 2003).

H_3: Social influence is positively and significantly related to consumers' intention to use SCS.

Facilitating conditions refers to a consumer's perceptions of the availability of necessary resources and support to participate in a certain activity (Venkatesh, et al., 2003). This phenomenon indicates the degree to which customers view themselves as having agency over their own behaviors. Positive facilitating conditions include the allocation of sufficient support and resources, which enable an individual to efficiently accomplish a task, free of any obstacles. Prior research has highlighted supportive factors that are essential for the adoption of SCSs, providing support for the aforementioned proposition (Gallivan, et al., 2005). Based on the research done by Palau-Saumell et al. (2019), the presence of facilitating conditions has a remarkable influence in inspiring consumers to adopt sustainable consumption patterns in the setting of grocery retail chains.

H_4: Facilitating conditions are positively and significantly related to consumers' intention to use SCS.

The existing literature indicates a positive correlation between the UTAUT model and customers' behavioral intention to use SCSs in the retail sector. The adoption of SST is strongly associated with each component. Additionally, the UTAUT model has been suggested as a comprehensive framework for understanding the factors that influence the adoption of SCS technology in grocery retail chains, specifically from the perspective of consumers.

METHODOLOGY

This study used a quantitative descriptive research approach to investigate consumers' behavioral intentions about the adoption of SCSs. The participants of the survey were selected according to their possession of a certain level of expertise, hence requiring a random selection process for participation. The research used convenience sampling, a non-probability sampling

approach, to choose participants from the target population. The study's target population included individuals who have used the SCSs at Korzinka supermarkets. This study used a close-ended questionnaire includes a Likert Scale to gather data by providing statements. In this research, participants were asked to evaluate their attitude towards the statement using a 5-point Likert-type scale.

The study utilized quantitative data analysis techniques for data analysis purposes. Prior doing the data analysis, the questionnaires collected from the field were exported from Google Forms and uploaded in the Microsoft Excel xlsx format. The Excel file was thereafter imported into the SPSS software. The data underwent analysis utilizing inferential statistical techniques, such as Pearson's correlation analysis and multiple regression analysis. Correlation analysis was used to investigate the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions and behavioral intention towards the adoption of SCS within the context of grocery retail, with the specific aim of determining if a positive or negative relationship existed. The dissemination of the ultimate processed information involved the utilization of pie charts, tables, and other illustrative modes of display.

All individuals involved in this study were adequately informed of the research's objectives, and their voluntary agreement was obtained prior to the distribution of the questionnaire.

PRESENTATION OF RESEARCH FINDINGS

The ratio among the male and female (Figure 2) is not too far away from one another according to the data. Even though the male participants had a slight edge with 54.2% over opposite gender counterparts who were accounted for the rest 45.8%. This indicates that the results of this study were not affected by gender bias.

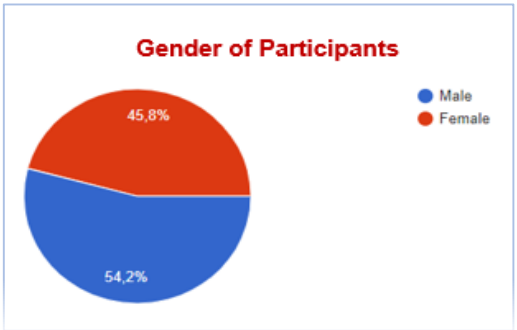


Figure 2: *Gender of Participants*

The findings demonstrate that most of participants are aged between 25-34 years (45.8%), while younger generation consumers, age range between 18-24, make up the second largest with 20.8%. The participants, whose ages range from 35 to 44 years and above, have shown a similar percentage which is less than 17%. In general, the data indicates that the participants represent diverse age groups and fairly involved in this project.

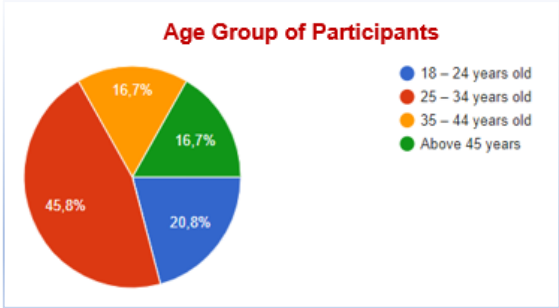


Figure 3: *Age Group of Participants*

The data implies that a large chunk of the respondents who participated in the survey have higher education. For example, people with postgraduate or higher degrees make up 54.2% and 4.2%, respectively, while 29.2% of the respondents are undergraduates. However, there are still a small number of participants 12.5% who do not have education degree.

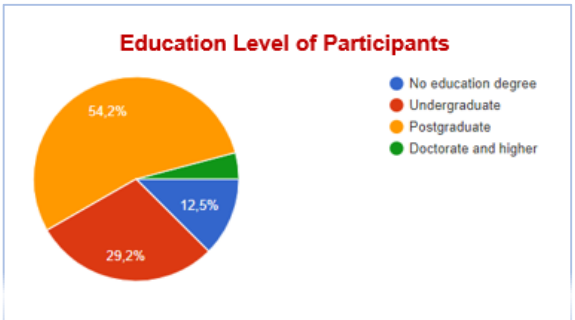


Figure 4: *Education Level of Participants*

The next chart gives information in terms of the occupation status of the participants. It shows that the employed or already retired but still working draw up almost a two third of respondents, while 37.5% of them are students with some sort of part time jobs. However, none of respondents are unemployed.

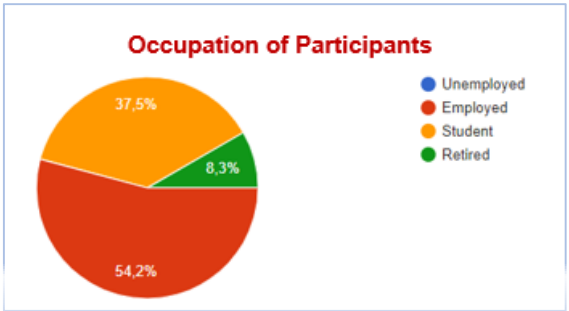


Figure 5: *Occupation of Participants*

Correlations

**. Correlation is significant at the 0.01 level (2-tailed).					

Table 1: *Correlations*

The antecedents of performance expectancy, effort expectancy, social influence and facilitating conditions are highly, positively and significantly correlated with each other. The significance value=.000 clearly confirms that there are high and significant correlations between the variables.

Regression Analysis

				Std. Error of the Estimate
a. Predictors: (Constant), FACILATORS, SINFLU, PEXP, EEXP				

Table 2: *Model Summary*

The coefficient of determination, R^2, in Table 2 is .927. What this indicates is that the four antecedents for independent variables, as a group, explain 92.7% of the variability in behavioral intention of the customers.

b. Predictors: (Constant), FACILATORS, SINFLU, PEXP, EEXP						

Table 3: *ANOVA*

In Table 3, the significance value is .000, that is, much less than 0.05. This confirms that the coefficient of determination, that is, R^2 of .927 almost certainly did not happen by chance showing the high validity of the regression model.

Table 4: *Regression Coefficients*

The behavioral intention antecedents of performance expectancy, effort expectancy, social influence and facilitating conditions have statistically significant effects on the behavioral intention of the customers because their respective p-values are all lower than alpha value of .05. For these four dimensions the study can reject the null hypothesis and claim that the study hypotheses are supported. The coefficients of these four variables are also positive. This for performance expectancy, for

instance, means that a 1 unit increase in the expectancy with regards to performance will result in a 25.6% improvement in behavioral intention of the customers. Likewise, a 1unit improvement in the facilitating conditions will lead to a 19.1% increase in the intention of the customers to use SCS.

DISCUSSION OF FINDINGS

The results of this study examine several connections and provide evidence for these relationships, as identified by a comprehensive examination of the existing literature. Within this particular context, the section emphasizes on the testing of hypotheses that relate to a possible association between the constructs of the UTAUT model and the adoption of a SCS by consumers.

H1: Performance expectancy is positively related to consumers' intention to use SCS.

In this study, the findings accept the commentary of that performance expectancy has a positive relation to consumer's intention to adopt self-service checkout technology that confirmed by (Chiu & Wang, 2008) and (Lee, et al., 2019). This finding suggests that consumers perceive advantages in using SCS will influence their desire to try it (Weijters, et al., 2007). Therefore, customers with favorable performance expectancy aim to implement newly launched self-service checkout system in Korzinka's supermarkets.

The study shows that a majority of participants (54.2%) had postgraduate degrees, and for them, SCSs seemed to be simple. Meuter et al. (2005) support this finding with their research findings that higher education is associated with the perception of SCS as being more understandable and pleasurable.

H2: Effort expectancy is positively related to consumers' intention to use SCS.

This hypothesis, according to Alam, et al. (2018) and (Venkatesh, et al. (2003), that effort expectancy from SCS experience will have a positive relationship with customers' intention to use it. Thus, if shoppers accurately understand the system, they are likely to believe that SCS is easy to use. The hypothesis was confirmed as most of the survey participants (45.8%) were almost young adults in the age group (25-34 years) and male respondents for whom self-monitoring can be quick and easy to use. It is in well agreement with Weithers' et al. (2007) argument that men are more likely to adopt SCS, as they tend to focus on the benefits of using the technology.

Today grocery consumers prioritize efficiency and convenience while visiting retail outlets because they demand a seamless and easy checkout experience. Furthermore, the rise of e-commerce is intensifying the rivalry faced by traditional grocery shops. Consequently, technologies like as SCS may assist grocers in simulating the ease and advantages of online buying while enhancing the in-store checkout experience.

H3: Social influence is positively related to consumers' intention to use SCS.

The result of the hypothesis reveals a significant relationship between social influence and intention to use SCS. Thus, the findings are consistent with previous studies which confirm that social influence promotes the use of SCS in retail stores (Venkatesh, et al., 2003), (Venkatesh, et al., 2012) and (Lee & Lyu, 2016).

Social influence is important here as the shoppers do value whether other people in their lives believe that they should use the new system. Hence, in the study findings social influence acts as a direct determinant of behavioral intention.

H4: Facilitating conditions are positively related to consumers' intention to use SCS.

In this study, the findings support the commentary of Venkatesh, et al. (2003), (2012) and Palau-Saumell, et al. (2019) that facilitating conditions are essential factor to encourage people to adopt SCS in retail sector.

The participants believe that there is a significant influence of an organizational and technical infrastructure on the use of the system. Hence, perceived behavioral control, facilitating conditions, and compatibility are vital considerations.

CONCLUSION

This study indicates that the behavioral intention antecedents of performance expectancy, effort expectancy, social influence and facilitating conditions are highly, positively and significantly correlated as well as have statistically significant effects on the behavioral intention. These findings are consistent with the findings of Venkatesh et al. (2003). Although in their study, the effects of performance expectancy, effort expectancy and social influence on behavioral intention are moderated by gender, age, experience etc., the current study has found direct effects of these variables on the intention to use SCS. Both studies do not use moderators with regards to the facilitating conditions and both studies reveal significant influence of the facilitating conditions on behavioral intention.

RECOMMENDATION

Based on the research findings, the following recommendations are worth stating:

Firstly, it suggests that Korzinka should make SCSs that are user-friendly, reliable, accurate, and efficient for daily utilization. Furthermore, the checkout process, SCSs should assist shoppers in efficiently scanning all items with barcodes, as well as those that require weighing and bakery products.

Secondly, Korzinka should implement training programs for its personnel and establish frequent communication channels to assess consumer perception towards using SCS, hence improving their effort expectation. Furthermore, Korzinka has to make SCSs more convenient by offering customers multiple choice in terms of payments, besides debit and credit cards.

Thirdly, Korzinka should provide immediate assistance to shoppers using SCSs in case of errors or safety concerns. Korzinka should also integrate alarm systems into their self-checkout interface when it becomes necessary to open more tills. The presence of a greater number of SCSs compared to traditional cashier tills may incentivize customers to engage in more purchases and quicker shopping visits.

Lastly, Korzinka should implement digital displays inside stores to showcase real customer videos, effectively demonstrating the straightforward nature of the SCS. Using these screens to execute marketing campaigns that portray SCSs as enjoyable experience for consumers.

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