

Introducing a Model for Customer Satisfaction Based Smart Business Systems

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Abstract — In the current era, with the growth of ICT, business systems experience a new form. Due to the variety of products and changing people's tastes, online sales services and platforms should be developed to achieve satisfaction. On the other hand, with the increasing expansion of data in the online business context, the variety of new products, and changing people's tastes, there is a need to run online businesses in a smart platform. This study believes that by providing some solutions to the fundamental gaps in online businesses can increase customer satisfaction. In the model prepared in this research, basic factors such as Real-Time Responsiveness are addressed. Thus, more detailed attention has been paid to people's tastes compared to previous studies so that the product offer would seem closer to the people's tastes. As a result, in this study, we tried to prepared an electronic business model based on smart platform to increase the quality of services, achieve satisfaction and establish electronic customer loyalty.

Keywords — *Smart City, Smart Business, Real-Time Responsiveness, Satisfaction, E-Loyalty*

I. INTRODUCTION

In the 21st century, given the increase in the population of metropolitan areas, scientific-academic, as well as industrial environments, have taken effective steps to become smart. Recently, to achieve the concept of smart city, scientific and industrial environments have given great importance to ICT infrastructure [1]. Pramanik et al. introduced smart people as one of the main puzzles in the smart city. Therefore, this study believes that in order to realise the concept of smart city, people should be familiar with new technologies and work with it well and easily in order to be able to accept it. Smart Business is one of the other puzzles of the smart city [2]. In a smart business system, all the processes of observing, selecting and purchasing and other issues are done electronically. Today, many companies study user behaviour to increase

satisfaction in the electronic platform. Park et al. introduce customer satisfaction as the most important factor in product sales and business success. They also introduce customer satisfaction as a principle that will encourage customers to repurchase products [3]. On the other hand, this study believes that one of the most basic issues leading customer satisfaction is to maintain the privacy of individuals' of information. Protecting customers' tastes and other personal information in a smart business system should be ensured. For instance, [4] the privacy of individuals' information is intended at the beginning of a health care model to establish E-loyalty. Moreover, the concept of satisfaction is also shown as a way to achieve electronic loyalty [4]. Henkens et al. accentuated the importance of smart service systems in business. They also valued customer well-being to achieve the desired business goal [5]. According to [6], smart home products are projected to reach about 2 billion devices worldwide by 2023. In the meantime, customer need assessment is important along with the satisfaction factor and other issues that should be regarded for a successful smart business system. Thus, Shin developed a model in which competitive strategies played a role by assessing the smart satisfaction index for the use of smartphones [7]. He also emphasises service development as well as improving Customer Relationship Management (CRM) in a smart system. In the following, Rita et al. focused on the impact of E-service quality and customer satisfaction on customer behaviour in online shopping. They aimed to develop a model to improve customer service quality in order to achieve customer satisfaction and trust [8]. However, Chang et al. concluded that "perceived ease of use" affects the two factors of perceived usefulness and perceived

enjoyment, so that it has a direct impact on customer purchasing and satisfaction [9].

A. *The Significance of the Research*

As mentioned in the introduction, today, due to the expansion and increasing progress in various fields, individuals' tastes for receiving a product or service are sometimes changing. Thus, the data must be carefully collected and monitored so that customers' tastes about goods and services are constantly identified and the closest offer is sent to them at safe times. On the other hand, this study emphasizes the smartness of the business environment, because in this case, the amount of error is minimised and costs are significantly reduced. Zhan and Miller, for example, acknowledged in their study that on average, patients around the world spend nearly 2.4 million extra days in hospital each year due to drug-related errors alone, and that these human errors cause the deaths of some 32,000 individuals and some other damage [10]. However, if the ICT platform is used appropriately, both the customers' needs will be met in real-time and the error rate in such platforms will be minimised. Hence, this study gives relatively good insights to researchers and smart business owners. This study believes that with this proposed model, customer satisfaction can be improved in smart business systems, because in this busy world, meeting customer needs in real-time is one of the most important challenges. Finally, this research believes that in a smart business that responds to the customers' needs in real-time and with the best quality level, smart offers that are sent for different customer tastes can be met with a positive response.

Finally, given the momentary progress in various fields of technology and its acceptance by individuals, as well as the study done for this research, it is felt that more comprehensive factors to improve customer satisfaction should be considered and reviewed in the context of smart business systems. On the other hand, as the days go by, individuals' tastes are changing. This is exactly what this study intends to address. In a smart and dynamic business system, one can understand the changes in individuals' tastes, and this is one of the most effective steps to improve customer satisfaction, followed by electronic loyalty. Furthermore, in a smart system, the customers' needs can be met with the highest accuracy and the lowest

error rate and their loyalty to services and goods can be maintained.

However, it should be noted that the main gap of this study is the development and consolidation of customer satisfaction in the context of e-business, which is well mentioned in this section and of course other sections as well. Furthermore, due to the questions raised in the literature review section, tables, and the proposed model in the research methodology section, we did not have access to smart business system to test the proposed model on it. Therefore, we suffice to present a proposed model theoretically.

II. LITERATURE REVIEW

This section, with 4 references, provides some overview of specific research in this field and also collects the existing knowledge. Here are some important backgrounds and studies of others in improving customer satisfaction in the context of smart business systems.

- Smart service systems are always striving to improve smart technology. Henkens et al. investigated the impact of smart technology on customer welfare and interaction [5]. They performed a systematic review of the concept of smart by testing 730 samples. In their developed model, they acknowledged that smart affects the personalisation mechanism, the factors of the personalisation mechanism affect the element of customer interaction and ultimately interaction with the customer leads to the well-being of the customer. Increasing customer engagement through an acceptable level of service system smart technology helps improve customer well-being. Finally, dynamism is one of the most important factors in the stability of a smart business system [5].
- Shin studied the customer satisfaction index in South Korea since there was less research in this area by 2015. He explored the impact of customer experience on product satisfaction (smartphones). Meanwhile, the model developed by Shin, the quality of services, content and system affected the two factors of perceived utility and perceived hedonicity, and finally these two factors had a positive effect on satisfaction factor [7]. The challenge in this study was that it

failed to include a systematic random sampling method to reduce bias. The second challenge seen in this study was that it failed to examine the user experiences from a variety of aspects.

- Rita et al. considered the expansion of E-service quality such as user-friendly applications and having efficient and user-friendly websites in online businesses as a prerequisite for increasing satisfaction and E-loyalty rates. The study was conducted in Indonesia and examined the data of an online survey of 335 consumers to test a research model using Structural Equation Modeling (SEM). They acknowledged that business systems that focus on quality customer service and privacy affect customer satisfaction [8]. One of the problems with this research was that it only collected data from one source and did not, for example, deal with expert opinions or other interview methods about customer satisfaction.
- The question that Chang et al. posed was: What motivates a customer to buy in a smart business system? They acknowledged that previous studies had focused more on the impact of technology and less on customer buying behaviours. Chang and his colleagues to fill this gap used the Hedonic Information Systems Acceptance Model (HISAM). Finally, they used SEM to analyse 298 valid samples with Smart-PLS 3.2.8. Finally, they concluded that perceived ease of use affects the two factors of perceived usefulness and perceived enjoyment, and these two factors directly affect the customers' purchases [9].

This research is an emerging case and therefore can be studied on a large scale or used for specific and specialised businesses. In this research, information should be collected in different fields and well monitored and examined. The purpose of this study is to provide an ideal model for improving customer satisfaction in the context of smart service systems. The questions suggested in this study are in Table 1.

This research is presented by monitoring, measuring and examining individuals' tastes over time and offering products or services according to the latest changes in individuals' tastes. This research believes that this can greatly increase individuals' satisfaction. This study will go a long way to extract a good and professional model of customer satisfaction in a smart business.

III. CONCEPTUAL FRAMEWORK

This study seeks a strategy to provide a model to improve satisfaction in e-business systems. It is predicted that considering this proposed model, the provision of services in the smart platform will improve.

The purpose of presenting the proposed model (Figure 1) in this study is to guess the customer's taste for the next product in electronic business systems with information such as personal information, tastes (Tables 2 and 3) and online shopping records of customers and analysis of their purchases in the interval specific time. It should also be added that the information and tastes of the people in the above tables are suggested and can be developed and completed.

Given the increasing diversity in online businesses as well as the emergence of different tastes, this research intends to have a deeper study in observing, analysing and examining users' behaviours. For this reason, here the analysis of personal information and individuals' tastes are collected much more accurately and completely than the studies conducted. Finally, after the studies in this field, the model that is developed for this research is as follows: Security, Information Privacy, Website Design have been extracted from [4], [8], [11]; Customer Engagement, Customer Well-Being, Awareness, Connectivity, Actuation, Dynamism extracted from [5]; Service Quality, Content Quality, System Quality extracted from [7], [8]; Perceived Usefulness extracted from [4], [7], [8], [10]; also, Customer Satisfaction, Customer Trust, E-Loyalty factors have been extracted from [4], [7], [8], [12], [13].

Achieving customer satisfaction in e-business may not be difficult, but establishing user's e-loyalty will certainly be difficult. Thus, smart platform can be of

great help in analysing and examining different tastes. In an e-business, emerging technologies can have a positive impact on increasing the sustainability of the business, as well as strengthening customer relationship [14]. In this model, important factors such as privacy, security and website design were considered as primary options since they can affect the level of trust in online shopping [8]. Factors of content quality, service quality, and system quality, referred to as e-service quality are directly related to customer behaviour. Service quality, system quality and content quality are always an integral part of the online business system. It should also be added that the factors mentioned in this prepared model are equally important and are an integral part of it. In this model, the Perceived Usefulness variable is one of the independent variables in the acceptance of new technologies, followed by service quality, content quality and system quality. This factor informs the user of the good performance of the system [8]. As mentioned, the factors listed are complementary to each other and their careful attention and implementation leads to Customer Trust [13].

Since [5] considers Customer Well-Being as one of the most important factors of customer interaction in smart business systems, in this model, it was placed before the satisfaction factor. This study believes that when customer welfare is considered as a priority, the satisfaction process also becomes positive.

At the bottom of the model, variables such as Awareness, Connectivity, Actuation, and Dynamism seem to be critical to create a smart business system model, while these variables can affect Customer Engagement [5].

In this proposed model, real-time responsiveness and customer needs assessment have been added as key factors that were not considered in previous studies.

Thus, in this model, it has been argued that after satisfying the customer's well-being and gaining the customer's trust, and on the other hand getting feedback on the customer's behaviour in the smart platform, the product closest to the customer's taste can be offered. Finally, in this proposed model, the satisfaction factor is included, which by obtaining satisfaction can provide the ground for e-loyalty to services.

IV. CONCLUSION

In the wake of days that have passed, the way of providing customer service in the electronic platform is expanding. In today's society, due to the great concern that exists for people, it is expected responsiveness to be answered in real-time. Therefore, it is expected that this factor should be constantly reviewed and examined in accordance with the personal information and people's tastes in connection with the purchase of a product. This study believes that it could be a theoretical study on this subject and could also give an overview to researchers in the field of smart business. Moreover, an attempt has been made in this research to bring important factors in the online business system that lead to satisfaction. It should be noted that satisfaction is only one element to establish e-loyalty to online business services. There are other influential factors that can lead to the establishment of e-loyalty along with the satisfaction factor.

Finally, it is suggested that this model be implemented, tested as an experimental platform in an online business environment using Deep Learning technique in future studies. In this case, the questions of Table 3 can be answered correctly, and this can be very effective for progress in both academic and industrial environments in this field.

Table I. Research proposed questions.

1. To what extent can a smart business system increase customer satisfaction?
2. How much is customer satisfaction after purchasing products or receiving services in a smart business system according to previous models?
3. How is the customers' information behaviour after receiving the smart proposed packages (which is sent to them in the electronic platform according to their information in Tables 1 and 2)?

Table II. Customers' profile.

No.	Gender	Age	Marital Status	Field	Income (Monthly)
1	Male	10-15	Bachelor	Private-School Student	200₺
2	Female	16-20	Single	Actress	10000₺
3	Androgynous	21-25	Bachelor	Master Student	1500₺
4	Female	26-30	Divorced	Businesswoman	7000₺
5	...	...	...	...	...
6	Male	>75	Married	Researcher	6000₺

Table III. Other individuals' personal information and some personality traits.

No.	Hair colour	Height	Weight	Skin colour	Interests	Life style	Hate
1	Black	100 _{cm}	50 _{kg}	White	Music (Rap) Sport (Chess) Smart wearables, and etc.	Stylish	Cigarette Lie Etc.
2	Dark brown	180 _{cm}	76 _{kg}	Black	Music (Dance) Sport (Basketball) Smart wearables	Modern	Thick clothes
3	Black	180 _{cm}	88 _{kg}	Brown	Music (Jazz) Sport (Volleyball) Online Shopping	Ordinary	Rainy weather Dark clothes
4	Blonde	190 _{cm}	90 _{kg}	Tan	Music (Rap) Sport (Climbing) Social Media & Online Shopping	Modern	Cigarettes Fast food
5	...	...	...	...	...	...	...
6	Gray	177 _{cm}	75 _{kg}	Black	Music (Classic) Sport (Chess), and etc.	Classic	Smart Things



Fig 1. Research Proposed Model.

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