The Consumer Preference and Buying Pattern of Medicines through E-Pharmacy During COVID-19 in Kathmandu Valley

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Abstract

This study examines the consumer preference and buying pattern of medicines through e- pharmacy during COVID-19 in Kathmandu valley. Consumer buying behaviour is selected as the dependent variable. Similarly, patient safety, price, consumer loyalty, consumer satisfaction and purchase intention are selected as the independent variables. This study is based on primary data with 145 observations. The correlation coefficients and regression models are estimated to test the significance and importance of different factors influencing e- pharmacy during COVID-19 in Kathmandu valley.

The study showed that patient safety has a positive impact on consumer buying behaviour. It means that increase in patient safety leads to increase in consumer buying behaviour. Similarly, consumer loyalty has a positive impact on consumer buying behaviour. It indicates that increase in consumer loyalty leads to increase in consumer buying behaviour. Moreover, consumer satisfaction has a positive impact on consumer buying behaviour. It means that increase in consumer satisfaction leads to increase in consumer buying behaviour. Likewise, price has a positive impact on consumer buying behaviour. It shows that increase in price leads to increase in consumer buying behaviour. Similarly, price has positive impact on consumer buying behaviour. It shows that higher the price, higher would be the consumer buying behaviour. Further, purchase intention has a positive impact on consumer buying behaviour. It shows that higher the purchase intention, higher would be the consumer buying behaviour.

Keywords: patient safety, price, consumer loyalty, consumer satisfaction, purchase intention, consumer buying behaviour

1. Introduction

E-pharmacy in the pharmacy business is able to have a positive effect in the form of an increase in sales turnover at pharmacies (Mukaddas *et al.*, 2020). Moreover, an analysis of the promotion strategy at a pharmacy in Karawang suggested that the application of home delivery is an appropriate business strategy to increase pharmacy promotion (Wijayanti *et al.*, 2019). Similarly, Hobbs (2020) showed that implementing an online ordering system and home delivery requires adequate infrastructure investment costs, such as web portal procurement costs, employee needs, and delivery capacity. Further, Fittler *et al.* (2018) found that online pharmacy has not only benefits

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but also have some patient safety risks in purchase of medicines apart from traditional chain. Patient counseling is considered as an important component of pharmaceutical care services (Lewis, 1997). Moreover, it is essential to improve the use of medications, enhancements in patients' satisfaction, patient compliance, decrease in treatment time, reduction in adverse effects, decreases in total health care costs and ensure optimal therapeutic outcomes (Ali, 2002).

Chordiya *et al.* (2020) asserted that e-pharmacy is more convenient to the consumers yet one should also look into the regulatory norms for the selling of drugs online, as it is directly related to the health of the consumers. Similarly, Fama (1970) proposed an efficient market hypothesis which posited that the prices of stocks quickly adjust to the new information available in the market and thus the prices reflect all information related to the stock, including risk. Moreover, Consumers nowadays can make another decision: they can choose a pill sold at their local pharmacy, as they have always done, or they can choose one from the Web, by purchasing it from a cyber-pharmacy or online pharmacy (Orizio *et al.*, 2010).

Similarly, in the absence of definitive curative measures for COVID-19, current infection control and management rely heavily on public health-preventative measures, including lockdown and social distancing, to prevent disease transmission (Anderson *et al.*, 2020). Further, Bagonza *et al.* (2020) explained internet pharmacies vary in quality, the legislation appears to be lagging behind in terms of the regulation of this complicated and fast-moving market as regulation of various private drug sellers is still a global challenge contributing to inappropriate treatments particularly at a time when health regulators globally are emphasizing that the population should quarantine themselves at home to restrict the spread of Covid-19. Moreover, true customer loyalty is created when customers become advocate of an organization without any incentive (Oliver, 1997). Similarly, in order to achieve customer satisfaction, organizations must be able to build and maintain long lasting relationships with customers through satisfying various customer needs and demands which resultantly motivates them to continue to do business with the organization on on-going basis (La Barbera, & Mazursky, 1983). Similarly, enhancing customer satisfaction should be a key driver for banks in maintaining a long-term relationship with their customers.

Nevertheless, issues regarding the quality of online prescription drugs have been a major public health concern. In addition, the legitimacy of online pharmacies selling pharmaceutical drugs may be questionable (Orizio *et al*.,

2011). Further, the availability of counterfeit drugs in Japan and South Korea is low, but it is high in countries such as China and India (Attaran *et al.*, 2020). Moreover, Fittler *et al.* (2018) showed that there is increasing patronage of online pharmacies and the reasons include the convenience of accessing pharmaceutical drugs from these online platforms and their comparatively lower cost than products obtained from physical pharmacist.

Similarly, Liu *et al*. (2020) showed the different remote pharmacy services in the form of electronic prescriptions, consultation through electronic media, and drug delivery services to reduce the occurrence of transmission of the coronavirus from one person to another. Further, Listianingrum *et al.* (2019) found that online applications can avoid any dispute if there is negligence in health services that is detrimental to consumers for the application company is legally only liaison between consumers and health service providers, namely partners of the application company. Similarly, Raine *et al.* (2009) found that how medicines, including prescription-only drugs, are obtained online with or without prescription. However, Long-term customer retention in competitive markets requires the supplier to go beyond mere basic satisfaction and to look for ways of establishing ties of loyalty that will help ward off competitor attack (Clarke, 2001). Consequently, satisfaction is a necessary prerequisite for building long term customer relationships and likely to increase loyalty (Bloemer & Ruyter, 1998).

Similarly, Gelatti *et al.* (2013) showed that patients with mental disorders have higher tendencies to engage in self-diagnosis and self-medication. Study conducted on the sale of psychiatric drugs found that patients with mental illness used online pharmacies to stock in drugs believed to be effective in managing their condition. Further, Childers *et al*. (2001) showed that skills and confidence in navigating websites was found to be antecedents of positive attitudes toward internet shopping. Moreover, Wiedmann *et al.* (2010) concluded that permanent innovation of these intangible dimensions of the customer value improves the clients' attitudes to online shopping and influences their e-shopping behaviour. Similarly, Liu *et al.* (2020) found that pharmacy needs to work with other healthcare organizations, professionals, and government agencies to address the following seven service needs: drafting professional service guidance's to pharmacists and pharmacies, establishing emergency drug formularies based on treatment guidelines, coordinating with drug companies and distributors to ensure adequate supply, storage and transport of identified formulary drugs, providing event-driven pharmaceutical care, establishing remote pharmacy services to reduce the incidence of human-to-human infections. Moreover, Oliver (2000) showed

that patients can now buy use of prescription of registered medical practitioner order the medicines via use of internet & receive them at their own doorsteps. They are a massive hit & more and more people are opting to use them rather than stroll down to local pharmacy. Further, Singh *et al.* (2009) found that rapid adoption of electronic health records (EHRs) has revealed potential safety concerns related to EHR design, implementation, and use.

In the context of Nepal, E-pharmacy is an attractive model in pharmacy system innovation because it can provide benefits such as ease of transactions, price transparency, saving time with delivery services, and in anticipation of facing public panic during the Covid-19 pandemic (Singh *et al.,* 2020). Similarly, by the end of March 2020, more than one hundred countries were in either partial or full lockdown to mitigate the spread of COVID-19 infection (Singh *et al*., 2020). Further, Shrestha *et al.* (2020) found that the Government of Nepal initiated its response against COVID-19 immediately after its first reported case in the last week of January in a Nepalese traveler from China. Moreover, Singh *et al.* (2020) concluded that the majority of peripheral health facilities were closed and routine essential health services were disrupted for several months because of the unavailability of personal protective equipment (PPE) for health workers. Further, Poudel *et al.* (2020) showed that childbirth at home in the absence of skilled health care workers and the prevalence of morbidities associated with other communicable and non-communicable diseases have also significantly increased after the COVID-19 outbreak in Nepal.

The above discussion shows that the empirical evidences vary greatly across the studies on the consumer preference and buying pattern of medicines through e- pharmacy during COVID-19. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the consumer preference and buying pattern of medicines through e- pharmacy during COVID-19 in Kathmandu valley. Specifically, it examines the impact of patient safety, price, consumer loyalty, consumer satisfaction and purchase intention on consumer buying behaviour in e-pharmacy in Kathmandu valley.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data. The data were gathered from 145 respondents through questionnaire. The respondents' views were collected on patient safety, price, consumer loyalty, consumer satisfaction and purchase intention and consumer buying behaviour. The study used descriptive and casual comparative research design.

The model

The model estimated in this study assumes that the e-pharmacy depends on consumer buying behaviour. The dependent variables selected for the study is consumer buying behaviour. Similarly, the selected independent variables are patient safety, price, consumer loyalty, consumer satisfaction and purchase intention. Therefore, the model takes the following form:

$$CBB = \beta_0 + \beta_1 PS + \beta_2 P + \beta_3 CS + \beta_4 CL + \beta_5 PI + e$$

Where,

CBB = Consumer buying behaviour

PS = Patient safety

P = Price

CS = Customer satisfaction

CL = Customer loyalty

PI = Purchase intention

Patient safety was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "I believe that the products provided through e-pharmacy website will not be expired date", "I am confident that the private information I provide during my transaction with the websites will only reach those online websites" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.759$).

Price balance was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "I will switch to local pharmacy shop if I will get lower cost", "I receive price discount and offers" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.808$).

Customer satisfaction was measured using a 5-point Likert scale where

the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "I can see old customers buying through e-pharmacy from many years", "I am satisfied with the discount price and offers they bring frequently", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α =0. 0.787).

Customer loyalty was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "I believe that the customers will pay money digitally without any fraud", "I will always recommend the direction of using products to the customers", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.848).

Purchase intention was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "After reading online reviews/comments, it makes me to buy the product", "My colleagues/friends influence me to do shopping through e-pharmacy", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.716).

Consumer buying behaviour was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "I like to buy products through electronic pharmacy", "I think my friends/colleagues who brought from e-pharmacy previously would definitely buy again in the future", and so on. The reliability of the feature was measured by computing the Cronbach's alpha (α = 0.762).

The following section describes the independent variables used in this study along with hypothesis formulation.

Patient safety

According to Runciman *et al.* (2009), a definition of a patient safety incident is 'an event or circumstance which could have resulted, or did result, in unnecessary harm to a patient'. Clancy (2010) showed that patient safety concerns are broadly defined as adverse events that reached the patient, near misses that did not reach the patient, or unsafe conditions that increase the likelihood of a safety event. Singh *et al.* (2009) found that patient safety is positively related with consumer buying behaviour. Quinn (1996) showed that patient safety culture is dependent upon the safe practices of nurses. Needleman

and Buerhaus (2003) concluded that nurses providing direct patient care can ensure that there will be a positive relationship with purchasing or buying behaviour. Based on it, this study develops following hypothesis;

H_1: There is positive relationship between patient safety and consumer buying behaviour.

Price

According to Rice-Evans *et al*. (1996), price can be defined as the thing that a consumer has to give up to buy and obtain a certain product. Al-Salem (2015) found that the price of well-known brand products affects the purchase process negatively. Price affects consumer behaviour in many ways and one of its aspects in terms of consumer behaviour is the price-quality relationship. Price affects consumer behaviour in many ways and one of its aspects in terms of consumer behaviour is the price-quality relationship. According to Aysel Boztepe (2012), environmental awareness, green product features, green promotion activities and green price affect green purchasing behaviours of the consumers in positive way. Consumer's buying attitudes toward organic foods can be divided into utilitarian and hedonic types; utility comes from the function of organic foods and non-sensory factors that produce practical satisfaction, while hedonic attitudes refer to how consumers use sensory factors to obtain emotional satisfaction (Voss *et al.,* 2003). Moon *et al.* (2008) price–quality association has a significant effect on private label purchase in risky categories. Based on it, this study develops following hypothesis;

H_2: There is positive relationship between price and consumer buying behaviour.

Consumer satisfaction

Elgaaied-Gambier *et al*. (2018) found that consumer satisfaction is a primary focus of e-commerce and serves as a critical link in the later stage of the supply chain. Customer satisfaction has significant implications for the economic performance of firms (Bolton *et al.,* 2004). Fornell (1992) found that customer satisfaction has negative impact on customer complaints and a positive impact on customer loyalty and usage behavior. Anderson *et al.* (2004) found a strong relationship between customer satisfaction and Tobin's q (as a measure of shareholder value) after controlling for fixed, random, and unobservable factors. Mittal and Kamakura (2001) showed that customer satisfaction management has emerged as a strategic imperative for most firms. Fornell and Rust (1997) showed that customer satisfaction positively affects the ratio of sales to employee. Based on it, this study develops following hypothesis;

H_3: There is a positive relationship between customer satisfaction and consumer buying behaviour.

Consumer loyalty

Generally, loyalty has been and continues to be defined in some circles as repeat purchasing frequency or relative volume of same-brand purchasing (Tellis, 1988). Hirschman and Holbrook (1982) argued that a dissatisfied consumer has three options for responding to a negative (service) experience: communicate dissatisfaction (voice), continue using the services without communicating to the concerned authority, or discontinue the relationship (exit). Zeithaml (1988) found a positive relationship between service quality and the willingness to pay a higher price and the intention to remain loyal in case of a price increase. Wang *et al.* (2004) showed that satisfaction and loyalty are related to consumer buying behavior. Based on it, this study develops following hypothesis;

H_4: There is a positive relationship between consumer loyalty and consumer buying behaviour.

Purchase intention

Purchase intention is a kind of decision-making that studies the reason to buy a particular brand by consumer (Shah *et al*., 2012). Consumers are affected by internal or external motivations during the buying process (Gogoi, 2013). According to Thapa (2011), purchase intention is effective in detecting the orientation of consumer buying behaviour. There is a significant positive relationship between purchase intentions a consumer buying behaviour (Azizi & Ajini, 2012). Hermann *et al.* (2007) showed that purchase intention is one important factor in customer purchase, thereby it has a significant positive impact on customer buying behaviour. Based on it, this study develops following hypothesis;

H_5: There is a positive relationship between purchase intention and consumer buying behaviour.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with means and standard deviations have been computed, and the results are presented in Table 1.

Table 1 shows that patient safety has positive relationship with the

consumer buying behaviour. It means that increase in patient safety leads to increase in consumer buying behaviour. Similarly, price has a positive relationship with market price per share. It means that increase in price leads to increase in consumer buying behaviour. Likewise, consumer satisfaction has a positive relationship with consumer buying behaviour. It means that increase in consumer satisfaction leads to increase in consumer buying behaviour. Furthermore, there is a positive relationship between consumer loyalty and consumer buying behaviour. It indicates that increase in consumer loyalty leads to increase in consumer buying behaviour. Further, this study shows that there is a positive relationship between purchase intention and consumer buying behaviour. It means that increase in purchase intention leads to decrease in consumer buying behaviour.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau coefficients between dependent and independent variables. The correlation coefficients are based on 145 observations. The dependent variable is CBB (Consumer buying behaviour). The independent variables are PS (Patient safety), P (Price), CS (Consumer satisfaction), CL (Consumer loyalty) and PI (Purchase intention).

Variables	Mean	S.D.	CBB	PS	P	CS	CL	PI
CBB	3.900	0.642	1.000					
PS	3.782	0.631	0.460**	1.000				
P	3.777	0.538	0.335**	0.385**	1.000			
CS	3.853	0.572	0.439**	0.476**	0.378**	1.000		
CL	3.859	0.566	0.355**	0.498**	0.382**	0.456**	1.000	
PI	4.005	0.537	0.378**	0.426**	0.420**	0.484**	0.464**	1.000

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Regression analysis

Having indicated the Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it presents the regression results of patient safety, price, consumer satisfaction, consumer loyalty and purchase intention on consumer buying behaviour in e-pharmacy in Kathmandu Valley.

Table 2 shows that the beta coefficients for patient safety are positive with the consumer buying behaviour. It indicates that patient safety has positive impact on the consumer buying behaviour. This finding is consistent with the findings of Singh *et al.* (2009). Likewise, the beta coefficients for price

are positive with the consumer buying behaviour. It indicates that price have positive impact on the consumer buying behaviour. This finding is consistent with the findings of Lee and Hwang (2016). In addition, the beta coefficients for consumer satisfaction are positive with the consumer buying behaviour. It indicates that consumer satisfaction has a positive impact on the consumer buying behaviour. This result is consistent with the findings of Fornell (1992). Further, the beta coefficients for consumer loyalty are positively related with the consumer buying behaviour. It indicates that consumer loyalty has a positive impact on the consumer buying behaviour. This finding is consistent with the findings of Wang *et al.*, (2004). Moreover, the beta coefficients for purchase intention are positive with the consumer buying behaviour which indicates that purchase intention has positive impact on the consumer buying behaviour. This result is consistent with the findings of Azizi & Ajini (2012).

Table 2

Estimated regression results of patient safety, price, consumer satisfaction, consumer loyalty and purchase intention on consumer buying behaviour in e-pharmacy in Kathmandu Valley

The results are based on 145 observations using linear regression model. The model is $CBB= \beta_0 + \beta_1 PS + \beta_2 P + \beta_3 CS + \beta_4 CL + \beta_5 PI + \varepsilon$ where the dependent variable is CBB (Consumer buying behaviour). The independent variables are PS (Patient safety), P (Price), CS (Consumer satisfaction), CL (Consumer loyalty) and PI (Purchase intention).

Models	Intercepts	Regression coefficients of					Adj. R_bar2	SEE	F-value
		PI	PS	P	CS	CL			
1	2.358 (9.871)**	0.422 (6.911)**					0.249	0.465	48.868
2	2.382 (10.119)**		0.429 (6.994)**				0.250	0.465	48.922
3	1.911 (7.216)**			0.554 (7.985)**			0.304	0.448	63.767
4	1.740 (7.289)**				0.588 (9.598)**		0.388	0.4201	92.115
5	1.736 (7.143)**					0.588 (9.439)**	0.380	0.423	89.104
6	2.109 (8.154)**	0.306 (3.929)**					0.272	0.458	27.847
7	1.784 (6.700)**	0.207 (2.584)**	0.250 (3.464)**				0.324	0.441	24.003
8	1.185 (4.195)**	0.172 (2.272)*	0.143 (1.995)*	0.346 (4.536)**			0.406	0.414	25.645
9	0.918 (3.360)**	0.078 (1.042)	0.070 (1.008)*	0.268 (3.607)**	0.336 (4.303)**		0.472	0.390	26.785
10	0.686 (2.550)*	0.063 (0.874)	-0.019 (0.262)	0.210 (2.891)	0.255 (3.282)	0.284 (3.702)	0.517	0.373	26.644

Notes:

i. Figures in parenthesis are t-values
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Consumer buying behaviour is dependent variable.

4. Summary and conclusion

E-pharmacy in the pharmacy business is able to have a positive effect in the form of an increase in sales turnover at pharmacies. Consumer behaviour analysis helps to determine the direction that consumer behaviour is likely to make and to give preferred trends in product development, and attributes of alternatives communication method etc. Consumer preferences for selected sustainable ornamental products and practices and found that one important attribute involved in the consumer's decision to purchase a plant was the type of container in which it was grown.

This study attempts to examine the consumer preference and buying pattern of medicines through e- pharmacy during COVID-19 in Kathmandu valley. The study is based on primary data with 145 observations.

The study also showed that patient safety, price, consumer satisfaction, consumer loyalty and purchase intention has positive relationship with consumer buying behaviour. The study concluded that proper patient safety, price, consumer satisfaction, consumer loyalty and purchase intention have a significant role in increasing consumer buying behaviour. The study also concluded that the most influencing factor is consumer satisfaction followed by consumer loyalty and price that explains the consumer buying behaviour.

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