

Investigating Product Uncertainties in Online Shopping: Evidence from Kenya

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Abstract

The internet has become an important part of the many aspects of people's daily lives such as work, study, entertainment and in form of electronic commerce, shopping. Electronic commerce is growing rapidly in Kenya. There are many successful business-to-business, business-to-customer and customer-to-customer online shopping companies in Kenya. As a consequence, competition between vendors is intense and, therefore, mitigating the negative effects of high product uncertainty is necessary requirement as it remains a biggest hindrance for success of the online shopping. The purpose of this research is to investigate how online product description, third party product assurance, customer service and website design mitigate the negative impact of high product uncertainty. A questionnaire with 28 items is designed to collect data from online customers. Using multiple regression analysis, the relationship between dependent variable (product uncertainty) and independent variables such as product description, third party assurance, website design and customer service is tested. The result shows that all the independent variables are negatively correlated with dependent variable, which means that product description, third party assurance, website design and customer service can be used by online vendors to lessen the problem of product uncertainty in online markets.

■ keywords : product uncertainty, customer service, website design, product description, third-party assurance

I. Introduction

1. Overview and motivation

As an East African country with a population of 45.9 million, Kenya is known as the regional hub for finance, trade, NGOs, tourism, education, transport and communication[1]. As such its stability and development is crucial not only for its own citizens, but also for that of the regional population of approximately 129.5 million. Kenya experience rapid growth in mobile and internet users recently[2]. Given that electronic commerce are increasingly expanding in Kenya, the capacity to support e-commerce and the opportunities in this field can be said very crucial in determine the country's continuous position as a regional heavy weight in trade and communication sectors. It is, therefore, important to examine the nature and magnitude of

barriers that affect e-commerce adoption and penetration in Kenya as a regional hub in East Africa. Eelectronic commerce use the internet to carry out business activities surrounding transactions of money and products such as ordering, purchase and delivery of products in easier and faster manner.

Despite a remarkable growth of Kenya's online market established in 2006, there is little research on factors affecting the performance of Kenya's e-commerce, not to mention the lack of research to address product uncertainty which largely affect online customers' purchase decision.

The purpose of this study has two folds. First, this study will expand the generalizability of the previous research on product uncertainty conducted in the U.S.[3] by adopting the research model and testing it in Kenyan e-commerce platform. Finding a novel factor on the success of e-commerce is attracting, but it will be more beneficial to test and adopt previously proven research in developing

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countries such as Kenya in theoretical and practical reasons. Second, this study investigate the product uncertainty of online used car which was rarely the subject of e-commerce research.

Using data collected from Kenya's online used-car vendor (ChekiMotors.co.ke), this study investigates the effect of product description, third party assurance, website design and customer service on product uncertainty and how they lessen the negative effects of product uncertainties.

II. Literature Review

1. Product uncertainty

Product uncertainty is defined as the buyer's inability to evaluate product true physical characteristics or descriptive characteristics and to predict how that product will perform in the near future due to lack of necessary information[4].

In traditional markets, product uncertainty is not clearly experienced by buyers as they can physically evaluate most product characteristics related to purchase intention by feeling, touching and examining it. Buyers in online market, however, can only evaluate products through electronic means which cannot fully provide the real product's characteristics for especially experience physical goods such as used cars or clothing[5]. Product uncertainty has been considered as an important factor in understanding trust and as the major barriers in purchase decision in e-commerce[6]. Majority of the online consumers do not buy products online due to their uncertainty associated with online markets. A research showed that over half of online buyers do not finalize their transactions due to the uneasiness and anxiety, negative feelings caused by untrustworthiness of vendor or information on the website or even the presentation formats of the products online[3]. Therefore, online buyers tend to be uncertain about products from online shopping and this uncertainty gets even worse if the quality of the products are not be easily revealed in their nature. Therefore, vendors should find ways of alleviating these negative feelings from potential buyers[7].

A substantial amount of literature focus on ensuring the

quality of the experience products in online shopping<Table 1>. The literature on information signals mechanisms argues that one can use signals to reduce information asymmetry by sharing information with the other party and a set of product-focused information signals may directly reduce product uncertainty[8]. Therefore, it is important for online vendors to use internet-related technology (e.g., multimedia tools) to provide product information describing their product's true characteristics, which, in turn, reduce product uncertainty.

The Internet helps businesses establish new marketing channels for products or services and improve the perceptions of product quality[9]. Mechanisms to transmit information about product quality to consumers includes expert's and users' review on product, product advertisement, and multimedia product description[10,11,12] on various types of experience goods and services such as liquor, food, beauty products, clothing, home appliances, and automobile[13].

Despite the concept of product uncertainty being introduced over 10 years ago, there is little work done in regard to product uncertainty in online used cars shopping. Product uncertainty may be more important factor in a customer's buying decision especially in buying used cars. Experience goods are products that can only be evaluated after purchase was made. The examples include used cars, shoes, clothes, etc. On the other hand, characteristics of search goods can be known prior to purchase decision. Search goods have qualities readily observable and, therefore, communicated well on the Internet. However, used cars have qualities that is much more difficult to evaluate, requiring physical inspection of domain experts to examine and possibly uncover defects, or buyers to rely upon the reputation of the manufacturer or previous owner.

Internet could reduces product uncertainties of experience goods by providing information on products prior to purchase.

Table 1. Research on Product Uncertainty

Factors	Experience Products	Ref.
Product description, 3rd product assurance	Used car	[3]
structural assurance and word-of-mouth	Shoes, clothes, sunglasses, and perfumes	[14]
online shopping experience product price, retailer reputation,	Whole spectrum of products(2,333 categories)	[15]
Website design, Customer service, Pricing	Books/megazines and apparel	[16]
Website media, Online product forums	Various products on Taobao and eBay	[17]

2. Vendor characteristics

Several studies have been conducted out to understand the motivation of consumers to choose among online vendors as well as the vendors factors driving customer satisfaction[18,19,20]. Three vendor characteristics, namely website design[21,22], customer service[23], and customer brand loyalty[24] were found to be important factors influencing online customer satisfaction. In this study, the direct effect of vendors' characteristics on customer satisfaction is not a major concern because these direct effects have been explored in previous literature. Instead, this study investigates how website design and customer service can mitigate the effects of product uncertainty in online customer satisfaction.

There are two vendor characteristics that has direct effect on customer satisfaction, namely website design and customer service[25]. Website design allows products look more attractive and useful to the buyers, and buyers to navigate the website more smoothly.

The other vendor characteristics driving online purchase is customer service. Customer service has been identified as a major factor that affects customer satisfaction. Vendors should be identified as reliable and customer complaints should be professionally handled. Website design and customer service was found out as important factors that is negatively associated to high product uncertainty This paper focus on exploring the direct effect of vendors' characteristics on product uncertainty because these characteristics can reduce the effects of product uncertainty.

III. Methodology

1. Research model

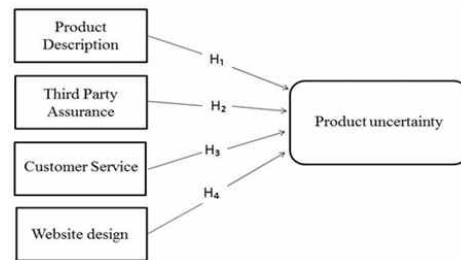


Fig. 1. Research Model

Based on the literature review, following research model<Fig.1> was developed .

2. Hypotheses

2.1. Product description and product uncertainty

Information asymmetries between buyers and sellers hindered online markets because buyers cannot examine products physically when they make a purchase decision[26]. Unlike physical marketplaces where customers can physically examine products, online shopping separate buyers from sellers, which, in turn, makes them difficult to interact each other freely[27]. Physical experience goods such as used cars may not be perfectly described in online shopping. However, IT-enabled solutions such as online product descriptions and multimedia tools could be used to mitigate product uncertainty since technological solution could allow buyers interact with the products. Therefore, following hypothesis is proposed.

H1: The online product description negatively influences product uncertainty.

2.2. Third party product assurance and product uncertainty

Trust is known to lessen perceived risk in online transaction and buyer's lack of trust on online vendors is a major factor that hinder the success of online markets[28].

Because trust is an important facilitator of a successful e-commerce platform, online vendors have been employed various trust building strategies including third party assurance programs to improve the level of trust among consumers on the vendor and the products they offer.

Building trust through third party assurers and institutions can provide a major impact on improving the level of continued participation of buyers in online markets[29]. When online vendors meet a third-party assessor's standard, certified technology, or procedures, their identifying logo or assurance seal can be used on vendors' website. The assessor's logo or seal is used as a cue or mechanism informing buyers that vendors comply with the third party's specific standards and requirements and, therefore, consumers can trust their products.

Even though a third party seal does not necessarily guarantee better quality, it might still have the effect of reducing the perceived risk involved from the experience goods. Consumers may choose to buy from vendors who offer a third party seal rather than those without such third-party assurance mechanism. Consumers are also more willing to reveal their payment information when they found that a website is certified with third party assurance seal. Therefore, the following hypothesis could be proposed.

H2: Third party product assurance negatively influences product uncertainty.

2.3. Customer service and product uncertainty

Customer service and support activities include set of procedures that are related with the production, purchase, delivery, and service of products and customers. Customer service should not be perceived as manipulation or marketing strategy but rather a genuine way of communicating and sharing information with customers. When buyers are offered with better customer service, they tend to be less concerned about potential risk embedded in product uncertainty of online shopping. Consumption-based affective responses theory argues that better customer service is likely to alleviate product uncertainty[30]. Therefore, product uncertainty can be reduced when buyers build positive perception about the vendors.

Moreover, customer service in online markets can be regarded as information search process because customers may try to contact customer service for more information when they experience problems. Information on the product plays a vital role in purchase decision process when buyers cannot physically evaluate what is being offered online. Therefore, immediate customer service to customers is critical in reducing product uncertainty when they face problems. Therefore, customers who receive high level of customer service many develop confidence during purchasing process due to the lessened uncertainty. Therefore, the following hypothesis is proposed.

H3: Customer service negatively influences product uncertainty.

2.4. Website design and product uncertainty

A well designed website can play major role in enhancing information search, improving consumer service, providing feedback mechanism and building a strong base for vendor-buyer relationship [31]. When product information is not well presented in the website, consumers may develop negative feeling of uncertainties such as uneasiness and anxiety. As a result, consumers may look for more information about a product caused by the problem of high product uncertainty.

Online vendor websites' certain positive design characteristics such as easy to use, navigate, and search plays an important role in how customers retrieve information online. Fast access to exact information buyers are looking for can improve information search experience and, therefore, influence their purchase decision positively[32]. Affective response-satisfaction theory argues that product uncertainty acts as negative affective reaction and decreases buyer's purchase intention in online shopping. The negative effect will be even worsen when customers can not retrieve information due to the poor website design.

On the other hand, if the website is designed well enough, buyers can easily search and retrieve information and are likely to have more positive feelings such as usefulness and easiness. When customers are supplied with proper amount of information, they are less likely to have negative feeling

about the vendor even if the product does not fit their tastes. Therefore, when vendor's website looks attractive and provide enough information, buyers are more likely to think that they misunderstand the information of the experience goods. Therefore, a well designed website allows the buyers to easily navigate and search the information and eventually can reduce the product uncertainty[33]. So following hypothesis will be proposed.

H4: Website design negatively influences product uncertainty.

IV. Methodology

1. Sample

The sample used for this study consisted of Cheki Motor's Kenyan consumers between the age of 25 and 45 living in the urban areas of Nairobi city. 200 questionnaires were randomly given to customers and only 50 active and unique users responded in December 2015.

2. Factor analysis

Research methodology involves factor analysis. Internal consistency of the data was measured by using Cronbach's Alpha[34]. Then, linear regression analysis is used to examine the relationship between independent variables (product description, third party assurance, customer service and website design) and the dependent variable (product uncertainty) to make prediction on their relationships outcomes.

All values of Cronbach's Alphas were above .65 which is the lower limit of acceptability. The analysis showed that all factors were reliable and internally consistent <Table 2>. Multiple regression analysis was used to test the influences of independent factors on product uncertainty. <Table 3> shows the correlation structure of the data used in this study. <Table 4> shows the summary from the SPSS output.

Table 2. Chronbach's Alpha

Construct	Cronbach's Alpha	Number of Items
Product Uncertainty	.801	4
Product Description	.768	4
Third Party Assurance	.788	4
Customer Service	.809	4
Website Design	.907	4

3. Regression analysis

Multiple regression analysis is a statistical method within in that researchers can evaluate the relationship among variables and explain the effect of multiple independent variables on a dependent variable.

In this study, the relationship between dependent variable (the construct being tested e.g. product uncertainty) and a set of independent variables such as product description, third party assurance, website design and customer service was tested using this statistical method. Then, individual hypotheses were tested using multiple regression prediction models with product uncertainty (dependent variable) and product description, third party assurance, customer service, and website design (independent variable). Table 3 shows that the five factors were seen to be significant in the prediction model.

The finding shows a significant negative correlation exist between product uncertainty and product description ($r=-.475$), third party assurance ($r=-.526$), customer service ($r=-.696$), website design ($r=-.378$); suggesting that all the hypothesized relationships were supported. The result indicates that all independent variables influence product uncertainty significantly with 58.5 percent of the variation explained in the variability of product uncertainty.

Table 3. Construct Correlation Matrix

Construct	Product Uncertainty	Product Description	Third Party Assurance	Customer Service	Website Design
Product Uncertainty	1.000				
Product Description	-.475	1.000			
Third Party Assurance	-.526	.501	1.000		
Customer Service	-.696	.416	.346	1.000	
Website Design	-.378	.646	.337	.420	1.000

Table 4. Model Summary

Model	R	R ²	Adjusted R ²	Std. Err. of Estimate	Website design			
					F-change	df1	df2	Sig. F-change
1	.765	.585	.548	.903	15.861	4	45	.000

V. Conclusion

Based on Kenya online shopping experiences, this study empirically tests relationships between a set of independent variable related to online vendor's characteristics and product uncertainty. This study shows product description, third party product assurance, customer service and website design have negative effect on product uncertainty. Kenyan consumers believed that customer service has the greatest effect on product uncertainty than website design. Third party assurance and product description also has significant influence on mitigating product uncertainty of experience goods. Customer services have a major impact on product uncertainty reduction as it allows buyers to interact with sellers directly. Buyers of used cars in a physical store actually prefer sales staffs to provide assistive service rather than online self-service and they are looking for similar experience in online shopping. They may see fewer problems associated with the products or acquire all the features and characteristics of the used car if they can have direct communication channels regarding questions or complaints on products offered online.

The third-party assurance and product description was also found to lessen product uncertainty. Third-party certifications and online product description was adopted from the previous research on product uncertainty in online used car market, eBay motors[13]. This study also shows similar results that third-party assurance and online product description signals appropriate information to buyers and enhance buyers' awareness about the true nature of the product quality. The effect of website design on product uncertainty was relatively little compared to other factors.

The contribution of this study is followed. By conducting empirical analysis of the product uncertainty on online used car shopping in Kenya, this study, firstly, adopt the previous research[3] on product uncertainty conducted in

the U.S. and test it in Kenyan e-commerce platform. The result of the research confirms that third-party assurance and online product description alleviate the product uncertainty, which expand the generalizability of the research. This study also include two new vendor characteristics, website design and customer service to the research on product uncertainty. Second, this study expand the literature on the product uncertainty of online used car which was rarely the subject of e-commerce research. Online car sales is expected to increase as companies invest resources to expand marketing channels and more consumers want to buy cars online[35]. Although product uncertainty of high-involvement products like used cars has been known as the major factor of relatively unsuccessful sales in online transactions, the implications from this study may provide valuable insights for vendors to overcome this barrier. First, providing customer service could be priority to mitigate the product uncertainty. Experience offered by the dealer can be delivered in other ways in online shopping and uncertainty will be lessened if vendors could provide adequate level of signals. Second, vendors also can enhance the online transactions by providing third-party certificate on the used cars with detailed product characteristics via web features as product description was found to be the influential in lessening product uncertainty.

This study has two limitations which, in turn, may provide ideas for further research opportunities. First, this study focused on used cars as an example of experience goods to study the factors diminishing product uncertainty for physical experience goods. However, used cars are very complex experience products with unique aspects. Future research could employ other types of experience goods to fully assess this research model's generalizability. The other limitation is the scope of the study. Ultimate purpose of e-commerce system is to improve its sales through continuous use of the system from satisfied customer. Therefore, future research may include overall customer experience[36], and more business oriented factors such as customer satisfaction and continuous use of the system[37].

The other research opportunity may come from applying the research model to other African countries where the level of e-commerce is in similar stage. Finally, Kenya has more mobile users than internet users. This unique setting

could provide research opportunity on mobile shopping of experience goods such as clothing and shoes.

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