Consumer Vulnerability due to Health Risk; Empirical Study based on CKDu Endemic Regions in Sri Lanka

N.H.K. Cooray a,*, D. S. R. Samarasinghe b

a Rajarata University of Sri Lanka
b University of Sri Jayewardenepura

ABSTRACT

The health risk is becoming an emerging topic in multidisciplinary studies. Similarly, consumer behavioral studies also make attention to reviewing the behaviors of individuals in health risk. Further, it is observed the less power in consumption related decision making by individuals with a higher degree of health risk assessed by them. Sri Lanka as a developing country with the agriculture base economy, CKDu has become a burning issue for the country from different perspectives. In which the study evaluates the level of consumer vulnerability experienced by the individuals based on the disparities in the risk assessment. The data collected using a self-administered questionnaire the validated measuring scale for the consumer vulnerability is used and in analyzing the collected data it has used the SPSS software with the mean comparison techniques. In analyzing the study considered the administrative classification of the CKDu risk factor and collects the data on consumer vulnerability representing the identified three risk segments. Based on the quantitative data analysis undertake it is identified the substantial variance in the degree of consumer vulnerability based on the disparities in risk assessment. Based on the main finding it is recommending for the policymakers and the business entities to identify risk as a segmenting base that differentiates the behaviors of the individuals in similar characteristics.

ARTICLE INFO

Article History
Submitted 14 Jul 2020
Accepted 15 Jul 2020
Available online 15 Aug 2020

JEL Classification
M39

Keywords
Consumer Vulnerability
Risk Assessment
Spatial Distribution
CKDU

*Corresponding Author: hirudinic@rjt.mgt.ac.lk

Author(s) retain copyright of the submitted paper (Please view the Copyright Notice of JMMCB).

This work is licensed under a Creative Commons Attribution 4.0 International License.
Introduction

The general understanding of the marketing refers to meet the need and wants of the consumers as a group or individual in a form of exchange (Piacentini, Hibbert, and Al-Dajani, 2001). With the light of the general understanding of the discipline of marketing, the marketing and consumer behavior researchers have attempted to review the behaviors of the consumers' group who have been neglected in engaging with the exchange process (Baker, Gentry, and Rittenburg, 2005). Circumstances like how the old people make the consumption decision (Berg, 2015); how poor people meet their day today consumption requirements (Hill and Stamey, 1990); how the rural communities access to the health care facilities (Lee, Ozanne, and Hill, 1999). In the context of these studies, it has been highlighted the impact of consumer vulnerability in consumers’ market interactions and also on the consumption patterns with emerging social issues.

The concept of consumer vulnerability has emerged as the theme for the multidisciplinary studies conducted in the societal impact of the consumption in the different consumer groups with less power. As per the definition by Baker, Gentry, and Rittenburg (2005) “consumer vulnerability is a state of powerlessness that arises from an imbalance in marketplace interactions or the consumption of marketing messages and products”. By the meaning itself, consumer vulnerability focuses on the consumer experience which does not explains who is vulnerable since anyone can be potential with their own experiences (Peñaloza, 1995). Furthermore, it has occurred with powerless consumers when they have less control over their consumption decisions.

Mason and Pavia (2015) explain the effect of vulnerability among the social networks where the consumers experiencing vulnerability. The impact of the social networks has been explained by Mason and Pavia (2015) the potential risk of been part of potential powerless or less control over consumption which limits the freedom of consumer decision making. Pavia and Mason (2014) have been identified the distribution of vulnerability among the social networks identified as the secondary vulnerability. This has been considered as the emerging study area.

On the other hand, the vulnerability can be identified as the key component that describes the impact of the risky event that has been distributed among the consumer groups (Vatsa, 2004). As per Pavia and Mason (2014), the vulnerability can be distributed among the social
networks which the people experiencing the vulnerability based on the different socio-economic conditions. In the context of the concern of the social sciences on the distribution of the risk outcome and its impact on the people who have experienced the risk. According to Beck (1992), the group of individuals with uninsured future outcomes has been categorized as the risk societies where the consumer is having less control over consumption decisions. In other wordings, Vatsa (2004) has been identified the higher level of vulnerability among the risk societies. The decision making of the members of the risk societies has been identified with the unique characteristics (Hirshleifer, 1988).

**CKDu as a Source of Health Risk**

Even the CKD has been identified as the global health issue but still, the CKDu has highlighted as the emerging health issue in developing countries especially with the agricultural communities (Wijkström et al., 2018). Sri Lanka with the identification of the CKDu patients from the country it is having the social and political debate on the CKDu during the last decade (Palimentry Debates, 2013). Further, it is predicted that around 40,000 people in the country may be affected by the CKDu (Presidential Task Force, 2019).

Whereby the majority of the patients have been recorded with the agriculture base economic activities and the proportionate between males and females is 3:1 and interestingly at the age of 40-60 years (Wanasinghe et al., 2018). The increasing risk in society has been caused to change the consumption behaviors of the individuals. This is been based on the consumer attribution of the CKDu to the consumption patterns in the area which is been based on the scientific study findings (Wanasinghe et al., (2018); Rajapakse, Shivanthan and Selvarajah, (2016); Wijkström et al., (2018); De Silva, (2018)). With the light of scientific findings of the context the consumer power over controlling the consumption has been limited, which means developed the consumer vulnerability within the community as the risk society.

Even in Sri Lanka CKDu has been recorded among the 10 districts and the 60 divisional secretariat area in the country (Presidential Task Force, 2019). In the recent health statistics in the country highlights that the majority of the patient of CKD has been identified from the North Central Province (Department of Census and Statistics, 2014). The Presidential Task Force (2019) highlighted that more than 44% of patients have been documented in the North Central Province as per the hospital records. North Central Province is the largest province in the country covering 16% of the total lands which consisting of two districts namely
Anuradhapura and Polonnaruwa. The total population of the areas recorded as the 1,266,663 with the population density was 118.2/km$^2$. It is been recognized as the main source of food production in Sri Lanka in which the majority of the farmers are been engaged with the rice production where more than 50% (Anuradhapura 51.7%, Polonnaruwa 50.2%) of the total population is been engaged with the agricultural industry (Department of Census and Statistics, 2014). Accordingly, the following section review existing literature in explaining consumer vulnerability arise due to health risks.

**Consumer Vulnerability**

Garrett and Toumanoff (2010) defined the “Consumer vulnerability is a state of powerlessness that arises from an imbalance in marketplace interactions or the consumption of marketing messages and products”. According to which it has been demonstrating the extended concept than just disadvantaged consumers (Piacentini, Hibbert, and Al-Dajani, 2001). Furthermore, Morgan, Schuler, and Stoltman (1995) identified vulnerable consumers as “whose idiosyncratic sensitivities have contributed to their product-related injuries”. Furthermore, it has been identified the consumer vulnerability with the consumer groups and the situational alternatives (Morgan, Schuler and Stoltman, 1995). This has been derived from the point that the simple structure of the disadvantaged consumers been more comprehensively explained with the vulnerable consumers (Garrett and Toumanoff, 2010). This has been highlighted the fact of vulnerability as the abstract concept. The consumers with vulnerability are demonstrating the varied consumption behaviors as the response to the vulnerability they have experience in the marketplace (Vatsa, 2004). In this ground in operationalizing the construct the consumer vulnerability, it has to determine when and why the consumer experiencing the vulnerability (Garrett and Toumanoff, 2010). Accordingly, it has been identified the individual characteristics, individual states, and external conditions and the dimensions for the consumer vulnerability (Baker, Gentry and Rittenburg, 2005).

With the empirical evidences on the consumer vulnerability it is been identifies different factors which may be the cause for the vulnerability as (1) permanent subjective conditions, as per chronic diseases (Pavia and Mason, 2014) and disabilities (Mansfield and Pinto, 2008), (2) potentially transient subjective conditions, as per addictive consumptions (Latour et al., 2009), (cyber) harassment (Visconti, 2016), economic poverty (Castella et al., 2013), and illiteracy (Adkins and Ozanne, 2005); (3) transient environmental factors, as per economic downturns (Du and Kamakura, 2012) and natural disasters (Baker, Hunt and
Rittenburg, 2007); (4) disrespectful social representations oppressing specific groups for whom permanence in a condition of vulnerability depends on the way such representations (do not) improve over time, as per ethnic (Visconti, 2016), gender (Walsh, 2009), and religious minorities (Jones and Middleton, 2007); and (5) a combination of the former conditions (Piacentini, Hibbert and Hogg, 2014). The empirical shreds of evidence underline the vulnerability in the permanent subjective conditions, as per chronic diseases (Pavia and Mason, 2014) the same context which has been testing the study. On the other hand, the studies have been highlighted the behavioral changes due to identified vulnerabilities in different contexts. With the understanding of the differentiation of disadvantaged consumers from vulnerable consumers makes the extended boundaries for consumer vulnerability measurement (Garrett and Toumanoff, 2010). The consumer vulnerability creating the changes in the consumer behavior make the differences in line with the underline reason behind the vulnerability (Pavia and Mason, 2014).

**Vulnerability due to Health Risk**

Even the studies have defined the risk in internal perspective Hollway and Jefferson (1997) highlighted the fact that the once risk perception is not depending on the independent knowledge (Beck, 1992) but there are occasions where the victimization cannot be determined by their cognitive means whereby it is required to have the external knowledge (Mol and Spaargaren, 1993). This is been influenced by the external source of information and the information accessibility which makes the determinations for the basement of the risk by the individuals in the society at large (Beck, 2002). The Ekberg (2007) highlighted the influence on the mass media and the globalization on the risk assessment. The risk as a social process it is having a relationship with the communication happens with the social networks (Bradbury, 1989). Communication is the social process of developing a shared understanding among the social network which has been created the communally accepted responsibility for the external environmental stimulus in the environment (Myers, 1994). In which it is been identified that the individual’s assessment of health risk is been determined by their knowledge and experiences as well as from the external communication sources.

Furthermore, in the context of the non-communicable disease, the many of the medical research findings identify the relationship with the lifestyle and the consumption with the risk of the disease (Arena et al., 2016). The individuals' attempt in making proactive actions in avoiding the risk is been identified as the key characteristic of consumer behavior in the
health risk of non-communicable diseases (Blair, 2007). Therefore it is been identified that the health risk makes a higher degree of influence on the consumption related decision making in the context of the non-communicable disease in the current context. On the other hand, the medical findings and the contradictory recommendations make the consumers confused about the risk assessment on the health (Faiola and Holden, 2017). Accordingly, the individuals with the contradiction in the information on the disease and the cause for the disease has been created a significant influence on consumer decision making in the consumption related situation (Blair, 2007). For an instant the in situations where the individuals are having clear well-defined processes and procedures in preventing the health risk the individuals attempt to follow the given instruction in avoiding the health risk (Gerrard, Gibbons and Bushman, 1996). The health risk is been it is been creating the increasing importance of determining the consumption-related decisions to prevent the negative event which is caused by the health risk which is been studied in the recent consumer behavioral studies (Green, Draper, and Dowler, 2003; Rosenstock, Strecher and Becker, 1994; Faiola and Holden, 2017). But with the absence of such a process and procedure, it makes the individuals utilize their ways and methods on avoiding the health risk (Goldberg, Halpern-Felsher and Millstein, 2002). In studying such a situation it the individuals' behavior is been determines by the different influencing factors. Accordingly, it is been identified that the health risk as to the highly influencing factor in shaping the consumer consumption decision making in the current emerging trending increasing health risk all around the world (Haugtvedt, Herr and Kardes, 2006).

Accordingly, it is been laminated that the health risk shapes the individuals' consumption-related decisions to avoid the potential occurrence of a negative event (Gerrard, Gibbons, and Bushman, 1996). On the other hand, it has made the individuals follow the recommended proactive mechanisms in certain health risks. But still interestingly with the emerging unknown health risk has been creating the confusion in individuals in making their consumption related decision. This has been creating consumers from finding different methods and practices as a response to health risks (Haugtvedt, Herr, and Kardes, 2006). The level of assessment on the health risk by the individuals is been influenced by different factors that determine the level of power and the knowledge that the individuals hold on the consumer decision making in the market. In other wordings, consumer vulnerability due to health risk is been determined with the level of power and the knowledge that individual holders in making objective decision making (Schwarzer, 1994).
Health Belief Model

As per the above literature on the health risk, it is been identified that the absence of a clear recommendation on the health protection method and the contradictory views has been significantly reducing the level of power and the knowledge of the individuals in making the consumption-related decisions. In explaining the consumers' decision making in the health risk, the health belief model has been used in many of the consumer behavioral studies (Risker, 1996). The model is been used and apply to studies for understanding and predicting individual use of health prevention and health services. Furthermore, in the model it is been identified the factors which determine the protective actions of the consumers as (1) perceived susceptibility; the level of individuals likelihood of being affected by the disease (2) perceived severity; the level of danger that the disease is having on the human begins (3) perceived benefits; by following the recommended proactive behavior the level of ability to avoid the disease and (4) perceived barriers to performing the proactive actions; whether the individuals are having the difficulties in making the recommended actions in practice (Fishbein and Yzer, 2003). On the other hand, it is been identified the other socioeconomic factors influence the individuals' actions as well in the health risk (Haugtvedt, Herr and Kardes, 2006). Especially the concern on the level of ability that the individuals have on making the independent decision on the consumption related matters has been limited due to higher assessment on the health risk by the individual in the market place (Faiola and Holden, 2017). Accordingly, it is been laminated that the once behavior against the health risk is based on the above factors which is been empirically validated in the many of the studies (Gerrard, Gibbons, and Bushman, 1996; Goldberg, Halpern-Felsher and Millstein, 2002; Green, Draper and Dowler, 2003; Thoits, 1995). In which it has been identified the individuals' assessment of the health risk determines the behavior. But still, recent studies have been laminated the fact that the individuals' concerns on the health risk is been significantly increased (Martins-Melo et al., 2012).

Accordingly, it is been highlighted that the individuals with the higher assessment on the health risk limited the consumer power and knowledge of the consumers in making consumption-related decisions independently where the individuals seek the market or the social information support for the decision making (Faiola and Holden, 2017). In which the health belief model provides a strong theoretical justification. But still, in providing the theoretical support for explaining the limited knowledge and power that the individuals have under the health risk it is been utilized the extended models in the health belief model.
According to the explanatory models in health protection behaviors (EM) it has been highlighted that the individual perception and the assessment on the diseases is context-based which lay with the (1) etiology of the illness, (2) symptom onset, (3) pathophysiology, (4) course of the illness, and (5) recommended treatment (Reifsnider, Allan, and Percy, 2000). This has been highlighted that individuals with a higher risk have continuously searching for methods for reducing the risk of the disease. Furthermore, in this, it has been highlighted that the contextual difference of the individuals’ perception of different diseases with the cultural and socio-economic conditions in the environment (Perloff and Fetzer, 1986).

**Research Methodology**

This study is under the deductive research approach. The deductive logic works more precisely than the general (Sekaran, 2003). Here the assumptions are tested and observations are added to address the assumptions. This ultimately leads to the testing of hypotheses with the original theories. Important features of the mitigation approach are the controls that allow assumptions to be tested, the generalization that the concept must be implemented; Research uses a very structured methodology to facilitate resale and explain the causal relationship between variables. (Saunders, Lewis, and Thornhill, 2011) (Gill and Johnson, 2002). In considering this study, the researcher used a sample of sufficient size to generalize the conclusions and the researcher reduced the hypotheses from the theory. The variables are implemented so that the facts can be measured quantitatively. Establishing a causal relationship between variables in an explanatory study. (Saunders, Lewis, and Thornhill, 2011). Clear research studies that establish a causal relationship between variables. Here the researcher can go ahead and subject the data to statistical tests such as correlation to get a clear idea of the relationship that the researcher has studied. Clear research studies that establish a causal relationship between variables. Here the researcher can go ahead and subject the data to statistical tests such as correlation to get a clear idea of the relationship that the researcher has studied. In the study it used an explanatory study design.

The persuasion sample is used as a non-probabilistic sampling method. The level of data collected during the external data analysis phase is called the analysis unit. Determining the unit of analysis is based on the research question in a specific study. A study in which individuals are placed as an analytical unit for study. In measuring consumer vulnerability uses 28 scale adapted consumer risk questions Shi et al. (2017). In data analysis, it uses the Statistics Package (SPSS) for Sociology as a data analysis tool.
**Reliability of the Assessment**

In assessing the reliability of the collected data Cronbach's Alpha and the Composite Reliability in which 0.7 has used as the benchmark in the assessment. Since the Cronbach's Alpha and the Composite Reliability is higher than 0.7 it is been accepted as a reliable measure.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Vulnerability</td>
<td>0.836</td>
<td>0.845</td>
</tr>
</tbody>
</table>

**Level of Consumer Vulnerability with the Geographical Distribution of Risk**

In the development of the Hypothesis, it has been intended to check for the level of vulnerability with the disparities of the risk distribution in the selected geographical area. Furthermore in determining the statistical tool in analyzing it is been considered the distribution pattern of the construct. With the nature of the non-normal distribution of the data in the construct of the consumer vulnerability, it is been utilized the Kruskal Wallies H test. Since the study has three independent samples to compare which is more than two independent samples (Chan and Walmsley, 1997). In conducting the Kruskal Wallies H test it is been tested for the normality for the three independent samples. The following table summarized the result of the normality test for the independent samples for the construct of consumer vulnerability.

**Normality Test Results for Independent Samples**

<table>
<thead>
<tr>
<th>Normality test result</th>
<th>Kolmogorov-Smirnova</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Sig.</td>
</tr>
<tr>
<td>High-Risk Area</td>
<td>.123</td>
<td>.007</td>
</tr>
<tr>
<td>Moderate Risk Area</td>
<td>.149</td>
<td>.000</td>
</tr>
<tr>
<td>Low-Risk Area</td>
<td>.229</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Survey Data, 2019

Accordingly, it is been observed the non-normal distribution in independent samples as well in considering the consumer vulnerability as the construct. Therefore it is been continue with the Kruskal Wallies H test in mean comparison. Accordingly the result of the Kruskal
Wallies H test it is been evident that there is a significant difference between identified independent samples which is been presented by the Sig. value of 0.000 with the 95% confidence level since the Sig. value is less than 0.000. With the identified significant differences between groups, it is been further analyze in gaining a clear understanding of the differences identified. For the purpose, it is been used the pairwise comparison between groups accordingly the following table 5.6.4 summarized the result of the pairwise comparison between groups.

**Pairwise Comparison for Independent Samples**

<table>
<thead>
<tr>
<th></th>
<th>Sig.</th>
<th>Adjusted Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk area and low-risk area</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>High-risk area and moderate risk area</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Low-risk area and moderate risk area</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Survey Data, 2019

With the test result, it is been identified that between all groups there is a significant difference with the 95% confidence which is been observed with the Sig. values are less than 0.05. On the other hand, it is also been observed that the adjusted Sig. value for the test with Sig. value of 0.000 which is less than 0.000. Accordingly, it is been accepted the hypothesis of consumer vulnerability in the society differs from the disparities of spatial distribution patterns of the CKDu within the endemic regions of CKDu in Sri Lanka.

**Conclusion**

Based on the analysis it is concluded that the study was that with the disparities of the risk distribution is been differ the level of consumer vulnerability that they experience in consumption related decision making. Accordingly, as a conclusive note on the study, it is been identified that health risk as the cause of consumer vulnerability and consumer vulnerability is been differ from the level of risk assessed by the individuals. Since the identified health risk with the absence of the reduction method, it has intense health risk assessment. In this, the probability of victimization is been highlighted as the main cause of health risk assessment as defined in the health belief model. The same is been emphasis with the study finding of disparities of consumer vulnerability with spatial distribution appears of the risk factor. With the identified nature of the consumer vulnerability as the subjective construct, it is also been identified the consumer vulnerability arises due to health risk.
References


10.1177/074391569501400108.


