Tomas Bata University in Zlín
Faculty of Management and Economics

Doctoral Thesis

Modelling Consumer Aversion and Trade – offs towards Pre-Purchase Risk Factors in Online Second-hand Goods Market

Modelování averze a kompromisů spotřebitelů k faktorům předkupního rizika na online trhu s použitým zbožím

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DEDICATION

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I however humbly submit that any errors that may be identified in this piece of work are entirely mine.

ABSTRACT

The market for second-hand goods continues to record strong growth in most economies around the world. However, as the second-hand market evolves, especially with the adoption of online e-commerce platforms, consumers' inclination for second-hand goods have also become complex. Whiles online transactions pose several risks to the consumer, the addition of used goods intensifies the risks to the user. As the risk factors brought about by online second-hand goods transactions persist, the relative importance or the level of aversion of these risks (weights) to the consumer have not clearly emerged. In view of this, this thesis proposes a model that would aid second-hand vendors to study and analyze the relative importance of pre-purchasing risks factors that consumers consider in online second-hand goods market. The model focused on understanding consumer aversion to pre-purchasing risk factors in online second-hand goods transactions in a trade-off setting. Thus, what risk factors are consumers willing to trade-off when contemplating on purchasing used goods online? Furthermore, the influence of perceived risk factors is studied across different demographic profiles to understand the uniqueness of the online used goods purchaser and their preferences. Both qualitative and quantitative research methods (mixed) were adopted; whiles primary and secondary data collection approaches were adhered for gathering information. The findings from this research did not only add to stock of existing theory, but also has the potential of assisting managers to understand the complexities involved in the online second-hand goods market. Hence, to take the cue of the value proposition of customers so far as risk to avert the customer is concerned. The managerial implication is that the competitive and sustainable ability of a company is positively related to its ability to realize and measure the weighty role individuals'/customers' risk plays in consumer decisions making. Thus, for online used goods vendors to be successful in consumer markets, they do not have to concentrate only on their internal activities, but also, they must understand and take precautionary measures regarding risk factors that might avert the customer from patronizing their business.

ABSTRAKT

Trh s použitým zbožím zaznamenává silný růst ve většině ekonomik po celém světě. Nicméně, jak se trh se second-hand zbožím rozvíjí, a to zejména po adoptování on-line platformy elektronického obchodování, tak se inklinace spotřebitelů k použitému zboží také stala komplexním procesem. Pokud online transakce představují pro spotřebitele určité riziko, přidává se pro spotřebitele další riziko, které plyne z prodeje použitého zboží. I když rizikové faktory, které přinášejí second-hand online transakce, přetrvávají, relativní význam nebo úroveň averze těchto rizik (váhy) pro spotřebitele nebyla zjišťována. Z toho důvodu je v této práci navržen model, který by napomohl prodejcům second-handu studovat a analyzovat relativní důležitost faktorů, které spotřebitelé považují za riziko při koupi použitého zboží přes internet. Model je soustředěn na pochopení averze a kompromisů spotřebitelů k faktorům předkupních rizik při online transakcích s použitým zbožím. Tudíž, které rizikové faktory jsou spotřebiteli považovány za kompromis, když uvažují o online nákupu použitého zboží? Proto, aby bylo možné porozumět jedinečnosti. Aby bylo možné porozumět jedinečnosti a preferencím nakupujících požitého zboží online, byl mimo to studován vliv vnímání rizikových faktorů napříč různými demografickými profily, byly využity jak kvalitativní, tak kvantitativní výzkumné metody (smíšené); byly dodrženy přístupy při shromažďování primárních i sekundárních informací. Závěry z tohoto výzkumu přispěly nejen jako přídavek ke stávajícím teoriím, ale mají rovněž potenciál napomoci manažerům k porozumění složitostem, které se vyskytují na online trhu s použitým zbožím. Z toho důvodu by mělo být pamatováno na hodnotu nabídky zákazníkům, zvláště pokud jde o riziko ztráty zákazníka. Důsledky pro manažery spočívají v tom, že konkurenceschopnost a udržitelnost společnosti je pozitivně spojena s její schopností realizovat a měřit váhu rizikových faktorů, které ovlivňují rozhodování jednotlivých spotřebitelů. Proto, aby prodejci použitého zboží (second-handu) byli na spotřebitelských trzích úspěšní, nemohou se soustředit pouze na své vnitřní aktivity, ale musí rovněž pochopit a přijmout preventivní opatření týkající se rizikových faktorů, které by mohly zákazníky odvrátit od podpory jejich podnikání.

EXTENDED ABSTRACT

The advent of the internet has sparked enormous expansion in the marketing sector especially the second-hand industry. One of such visible strength of the internet is particularly felt in the way it empowers second-hand goods vendors to publicize their goods on online platforms to boost sales. As a matter of fact, second-hand goods that previously used to be traded in some open bazaars are now repackaged, remanufactured or refurbished for sales on online e-commerce platforms. However, as the second-hand market keeps springing, consumers' inclination for used goods have also become complex and sophisticated mainly due to the affordances of alternatives it gives the consumer before deciding on purchasing online goods. The underlying fact of this research is that, while online transactions pose multiple risk to the consumer in question, the accumulation of second–hand goods exacerbate the entire risks inherent in the consumer. Given the multiple risk factors brought about by online second–hand goods transactions, the relative importance (weights) of these so-called risk that the consumer ascribes to those perceived risk factors that tends to avert the consumer to connect via online in search of second–hand goods have fallen short in literature. To do this, Firstly, this research adopts and draws an inspiration from the theory of conjoint measurement developed by Lucey and Tukey and extended by Green and Rao to learn of consumer preferences when faced with pre purchasing risk factors. Secondly, the research adopts some data mining algorithms to mine relevant patterns in the data set in tandem with the objectives of the thesis. These concepts are embarked upon to explain and analyze the pre-purchasing risk factors embedded in consumers using the Czech Republic as the case study. The general aim of the research would be to expand knowledge on consumer online buying behavior. In particular, the dissertation would focus on modelling consumer aversion to pre-purchasing risk factors in online used goods transactions in a trade-off setting. The sub-objectives were :(1) To identify relevant attributes (factors) and their respective levels using expert knowledge (interviews) and the literature in relation to pre- purchase risk factors in online used goods transactions. (2) To design a conjoint analysis model that adequately represents consumers' pre-purchasing hesitancy(aversion) intentions towards online transacted used goods. (3) To understand the other risk factors consumers would be willing to trade-off as they contemplate on purchasing used goods online. (4) To examine the influence of a perceived risk factors on the decision to purchase of second hand goods online. (5) To determine choices of each socio demographic group in relation to the aversion (utilities) assigned to each of the risk factors. (6) To analyze the magnitude of association of risk inherent in the customer regarding second-hand goods online.

A total of 329 respondents were randomly selected from the Czech Republic. Out of a total of 329 respondents selected from the Czech Republic, Male respondents

recorded 55 percent (55%) ahead of their Female counterparts with 45 percent (45%). It can also be seen that majority of the respondents were captured in the Zlinsky Region with 40 percent (40.4%), followed by respondents in Jihomoravsky region 7.0 percent (7. 0%). It must be noted that the majority of the respondents were from the Zlinsky region. This is partly because the researcher was based in the Zlinsky region at the time of the research. It can also be seen that respondents with bachelor's level of education patronized in the research with 47 percent (47.7%) with High school levels graduate following suite on 39.5 percent (39.5%) response rate. Moreover, a sizable number of the respondents had shopped online and purchased used good online before with 92.7 percent (92.7%) and 49.2 percent (49.2%) respectively. Quite surprisingly, 49.2% of the respondents' had the feeling of some risk that might likely avert them from initiating online transactions most specifically used goods.

The findings revealed the following attributes with the most relative importance (risk) as far as consumers' pre purchasing risk intentions are: Health Risk (39.71%), one of the basic tenets of risk aversion in online transactions of used goods was adjudged the most riskier attribute. This is seconded by Financial risk (31.39%), and Security risk attribute (17.10 %). However, the Psychological risk attribute recorded the least most riskier attribute by respondents in the Czech Republic with (11. 80%). The part-worth utility (risk) also revealed that respondents in the Czech Republic who are averted to purchasing used goods online can be explained by the following: In terms of Financial risk (A1) respondents are Not concerned, Security wise (A2) respondents seek for their integrity, psychologically (A3), respondents are keen on the Appearance of the used good while in Healthy (A4) situations respondents are much particular about the recyclable nature of the used good in question. In this research, a comprehensive mathematical model of online pre-purchasing hesitant model was developed for the second-hand industry. The mathematical model was grounded on the attributes and their respective levels that were stimulated from literature and expert opinion. This will in effect enable sustainability of second-hand vendors who are trading online or yet to be traded online in the Czech Republic. The model provides a real-world business scenario geared towards pre-purchasing risk factors that will assist managers in this industry in their quest to sustain through this technological dispensation. Again, in the event of embarking on some data mining algorithms as earlier mentioned, this study has provided insight into demographic variables in relation to the pre purchasing risk factors averting customers to connect via online in search of second-hand goods. Consequently, the research revealed through the K means clustering algorithm that, consumers or respondents in these regions, namely, Pardubicky, Vysocina, Kralovehradecky regions in the Czech Republic are more circumspect concerning the zeal to embark on online

transactions specifically second-hand goods. The research further revealed that most of the respondents or customers are with this fear because of the financial, psychological risk factors that have violated the overall respondents' relative importance (risk) discouraging customers to shop via online in search of second-hand goods been attributed to healthy scenarios. Again, the results of the association rule technique revealed that respondents within the gender frame are both adamant to hook via online in spite of the fact that, they have shopped online, yet do not think of looking at second-hand goods side because of some risky influence inherent in them, even if the respondent is a mere personal user of online transactions. In all these developments, the research concludes that second-hand industry needs to redesign their websites with much attention to reinforce stringent measures that will give a better assurance of the aforementioned risk factors that will tend to avert the customer from connecting via online in pursuit of second-hand goods. This should be initiated in cognizance with what inherently runs through the minds of the customer towards engaging in such transactions, of which this study has sought to reveal.

ROZŠÍŘENÝ ABSTRAKT

Příchod internetu vyvolal obrovskou expanzi v oblasti marketingu, zvláště v odvětví second-handu. Jednou ze silných stránek internetu je, jak umožnit prodejcům použitého zboží (second-handu) propagovat své zboží na on-line platformách, a tak zvýšit prodej. Ve skutečnosti je použité zboží (second-hand), které bylo dříve obchodováno v otevřených bazarech, nyní přebaleno, repasováno nebo rekonstruováno pro prodej na on-line platformách elektronického obchodu. Nicméně vzhledem k tomu, že poptávka po second-hand zboží pokračuje, je inklinace spotřebitelů k použitému zboží složitým a sofistikovaným tématem, a to především z důvodu dostupnosti alternativ, které ovlivňují přednákupní rozhodování spotřebitelů na online trhu. Základem tohoto výzkumu je skutečnost, že zatímco on-line transakce představují pro dotčeného spotřebitele počet rizik, akumulace použitého zboží zhoršuje pro spotřebitele rizika celkově. V literatuře jsou velmi málo zmiňovány četné rizikové faktory, které přináší online transakce s použitým zbožím, a relativní důležitost (váha) těchto takzvaných rizik, které vnímá spotřebitel, a které mají tendenci odvrátit spotřebitele, od hledání second-handu v online prostředí. Tento výzkum, za prvé akceptuje a čerpá inspiraci z teorie contjoin měření, které rozvinuli Lucey a Tukey a které rozšířili Green a Srinivasan proto, aby prozkoumali preference spotřebitelů u předkupních rizikových faktorů. Za druhé, k naplnění cílů práce jsou, pro shromáždění dat, využívány ve výzkumu algoritmy data miningu a relevantní modely. Tato koncepce je zaměřena na vysvětlení a analýzu přednákupních rizikových faktorů u spotřebitelů, kde je využito, jako případové studie, prostředí České republiky. Obecným cílem výzkumu bude rozšíření znalostí o chování spotřebitelů při online nakupech. Dizertační práce je zaměřena hlavně na modelování averze a kompromisů spotřebitelů k faktorům předkupního rizika na online trhu s použitým zbožím. Dílčími cíli byly: (1) Identifikovat relevantní atributy (faktory) a jejich příslušná úroveň s využitím expertních znalostí (rozhovorů) a literatury, v souvislosti s přednákupními rizikovými faktory u použitého zboží při on-line transakcích; (2) navrhnout model contjoint analýzy, který adekvátně prezentuje váhavost (averzi) spotřebitelů k online transakcím s použitým zbožím; (3) porozumět dalším rizikovým faktorům, ke kterým mají spotřebitelé kompromisní přístup, a to proto, že uvažují o on-line nákupu použitého zboží; (4) vyhodnotit vliv vnímaných rizikových faktorů na rozhodnutí k on-line nákupu použitého zboží; (5) determinovat volbu každé sociálně demografické skupiny ve vztahu k averzi (prospěšnosti) přiřazené každému z rizikových faktorů; (6) analyzovat závažnost asociací rizika, kterou zákazník spojuje s online použitým zbožím.

Celkově bylo náhodně vybráno 329 respondentů z České republiky. Z celkového počtu 329 respondentů vybraných z České republiky, bylo 55 procent (55%) mužů, a 45 procet (45%) žen. Je také zřejmé, že většina respondentů byla zachycena ve

Zlínském kraji 40 procent (40,4%), následovaná respondenty v Jihomoravském kraji 7,0 procent (7,0%). Je třeba poznamenat, že většina respondentů pocházela ze zlínského regionu. To je částečně i proto, že výzkumný pracovník v době výzkumu působil v oblasti Zlínského kraje. Rovněž lze vidět, že respondenti s bakalářskou úrovní vzdělání ve výzkumu převažovali, a to s 47 procenty (47,7%), podíl absolventů středních škol byl 39,5 procent (39,5%). Navíc, značný počet respondentů měl dobré zkušenosti s předchozím online nákupem 92, 7 procent (92,7%) a 49,2 procent (49,2%) kupovalo použité zboží. Překvapivě bylo, že 49,2% respondentů mělo pocit určitého rizika, které by je pravděpodobně mohlo odradit od zahájení on-line transakcí s použitým zbožím.

Výsledky odhalily následující atributy s nejvíce relativní důležitostí (rizika), pokud jde o obavy spotřebitelů před nákupem: zdravotní riziko (39,71%), jedna ze základních averzí k riziku v on-line transakcích s použitým zbožím, bylo nejvíce hodnoceným rizikovým atributem. Sekundovalo finanční riziko (31,39%) a bezpečnostní riziko (17,10%). Psychologické riziko se však projevilo u respondentů v České republice, jako nejméně rizikové (11,80%). Částečná užitnost (riziko) rovněž ukázala na vysvětlení, že respondenti v České republice mohou být od online nákupu použitého zboží odrazeni, a to následujícím způsobem: Pokud se jedná o finanční riziko (A1), tím se respondenti nezabývají. Respondenti zajímající se o bezpečnost produktů se snaží o svou integritu (A2), psychologicky (A3), respondenti mají zájem o vzhled použitého zboží, zatímco u zdraví (A4), jsou respondenti hodně obeznámeni s recyklovatelností použitého zboží. V tomto výzkumu byl vytvořen komplexní matematický model pro online předkupní váhavost pro second-hand odvětví. Matematický model byl založen na atributech a jejich příslušných úrovních, které byly stimulovány literárními a expertními názory. To umožní udržitelnost podnikání prodejců second-handu, kteří již obchodují online, nebo se budou v České republice online obchodovat. Model poskytuje skutečný podnikatelský scénář, zaměřený na předkupní rizikové faktory, které pomohou manažerům tohoto odvětví v jejich úsilí o udržitelnost této technologické dispenzace. Opět platí, že v případě přechodu na algoritmy dataminingu, jak bylo dříve zmíněno, tato studie poskytuje přehled o demografických proměnných ve vztahu k přednákupním rizikovým faktorům, které odrazují zákazníky, aby prostřednictvím připojením on-line, hledali použité zboží. Tudíž výzkum odhalil prostřednictvím K, algoritmus klastrování, že spotřebitelé nebo respondenti v regionech, konkrétně v Pardubickém, Vysočina, Královo-hradeckém kraji v České republice, jsou obezřetnější, v online transakcích s použitým zbožím. Výzkum dále ukázal, že většina respondentů nebo zákazníků má obavy z důvodů finančních a psychologických rizikových faktorů. Tyto faktory narušily relativní důležitost (riziko) u všech respondentů, a odrazení zákazníků nakupovat použité zboží prostřednictvím internetu je připisováno

vytvořeným scénářům. Opět platí, že výsledky techniky pravidla asociace odhalily, že respondenti v rámci obou pohlaví jsou rozhodně zainteresováni přes internet, a navzdory skutečnosti, že nakupovali on-line, přesto nevnímají dalších rizikové faktory při online transakcích. V souladu s vývojem, tento výzkum dospěl k závěru, že průmysl prodeje s použitým zbožím, potřebuje redigovat své webové stránky, a s velkou pozorností, podpořit zpřísnění opatření, která poskytnou lepší jistotu v odhalení a zvládnutí výše uvedených rizikových faktorů, které mají tendenci odvrátit zákazníka od nákupu použitého zboží na online trhu. Tato studie se snažila odhalit to, co prochází myslí zákazníka při online transakcích, a podpořit zahájení procesů zpřísnění při oline transakcích

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ACA	Adaptive conjoint Analysis
MONANOVA	Monotonic Analyses of Variance
ANOVA	Analysis of Variance
CBC	Choice-Based Conjoint
CSO	Czech Statistical Office
GDP	Gross Domestic Product
TCA	Traditional Conjoint analysis
EFA	Exploratory Factor Analysis
CA	Conjoint Analyses
B2B	Business to Business
B2C	Business to Consumer
C2C	Consumer to Consumer
MDC	Max-difference Conjoint Analysis
HBC	Hierarchical Bayes Conjoint Analysis
IT	Information Technology
KMO	Kaiser-Meyer–Olkin
PCA	Principal Component Analysis
NICE	National Institute for Clinical Excellence (
SEC	Self-Explicated Conjoint Analysis
SPSS	Statistical Package for the Social Sciences

1. INTRODUCTION

1.1 Research Background

Around the globe, the market for second-hand goods and in particular used vehicles, continue to record high annual growths, in terms of patronage (Clerides, 2008; Czaga & Fliess, 2004; Heese et al., 2005; Singh, 2015). This runs contrary to a growing global trade restriction on certain kinds of second-hand goods. This implies that the market does not seem to be nearing an end anytime in the foreseeable future (Czaga & Fliess, 2004). International trade of second-hand goods, though, used to target poor under-developed and developing countries as their destinations, according to (EBay, Amazon, Taobao, OLX, Alibaba) etc. the emergence of several e-commerce platforms have changed the dynamics of destination of such second-hand goods (Singh, 2015; Lewis, 2011; Ghose, 2009). Testaments to this state of affairs have been given by Heese et al., (2005) and Ghose (2009) in the literature by way of explaining the booming intra U.S trade for used vehicles (cars). Williams & Paddock (2003) have also in a survey explicated that 40% of consumers in the U.K had bought various kinds of used goods during the last 12 months when the survey began. This establishes the fact that though poor nations are often beneficiaries of used items, for differing reasons, there is a growing interest in the trade in the developed world as well.

The growing interest being exhibited in used goods, according to Austin (2015) and Shevlin (2008), could partially also hinge on the emergence of goods that have been made up or refurbished. Despite the fact that the rationale for refurbishing the good or commodity is not disclosed often, buyers are lured to purchase them with relatively low price, good physical condition and the fact that a certified manufacturer has reconditioned the good or commodity (Kogan, 2011) as baits. Shevlin, (2008) has argued further that refurbished or done-up goods unlike completely used goods remain products that were once recalled either by the manufacturer or the vendor for various reasons. Such goods or commodities that are recalled are tested, repaired, remanufactured or reconditioned for subsequent further sale (Oraiopoulos, Ferguson, & Toktay, 2012).

In spite of the pertinent reasons listed above that propels the customer to buy used goods or refurbished specifically online, there still exists a threat to avert the customer in engaging in that transaction (Kwarteng et al; undated). This is devoid of the geographical area or region or country the consumer is coming from. As a matter of fact, risk aversion toward the patronage of used goods online differs significantly among consumers in terms of age and sex, educational background etc. with several

reasons given the internet and its infrastructure backbone of that particular country or region.

In relation to the Czech Republic as an emerging economy, it is a tacit knowledge that a proportionate amount of second-hand goods outlet remains a part of the country's economy. According to reports from Statisticstimes (2016), Czech Republic ranks 24th in Europe in terms of second hand goods contribution to GDP Per capita (nominal) with an amount of 19,855 euro and 19,563 euro in 2013 and 2014 respectively, compared to its sister countries like the United Kingdom, France, etc. which are ranging from 35,102 euro and above in terms of per capita GDP (Nominal). On this ground of GDP per capita exhibited from the data, there is an indication of a proportionate amount of patronage in the purchase of second-hand goods in the Czech Republic. Some of the items mostly bought through second-hand outlets are electronics, vintages, and antiques used clothes among others. Different types of second goods patronized by the population of the study will form part of the analysis in the mainstream research. In the Czech Republic, there is a huge market for such used goods (retail shops) with notable e-commerce sites that deal with used goods. Some of the popular e-commerce websites that offer used goods in the Czech Republic are http://www.aukro.cz, http://www.bazos.cz, and http://www.ikup.cz/.

The contribution of used goods purchases to economies globally cannot be underestimated. The sector in the Czech Republic is endowed with numerous vendors and consumers whose activities need to be studied to enhance the industry performance. Hence, this dissertation embarks on advanced marketing technique (conjoint analysis) coupled with some data mining algorithms to investigate the relative importance (risk) and deterring sentiments consumers attach to buying used or second-hand goods online. In addition, the research will cluster the risk according to the demographic variables used and offer concrete recommendations to second hand vendors. The research is built on the basic premise that, in the second-hand goods industry, marketing managers are unsettled about the behavior of customers from different demographic situations, specifically, towards the risk and relative weights (factors) attached to buying used goods online. However, the combination of factors towards the demands on used goods online can differ from consumer to consumer depending on the importance or risk aversion and the need for the products to the consumer as earlier envisaged.

In fact, various studies have attempted to detect a difference as well as the motivational and behavioral factors towards purchasing used goods. However, consumer behavior and the risk factors that inhibit (avert) the customers purchasing decision on used or

second goods online relative to the weights attached by the consumer in question has not been studied extensively. Hence, a study geared towards modeling pre-purchasing risk governing consumer behavior on used goods online is relevant.

1.1.1 Roadmap to The Thesis

The dissertation encompasses ten (9) chapters. The first chapter sets the preamble for this explorative study and introduces readers to the background of the study. Following the introduction in the first chapter (1), the problem of the study is highlighted with delimitations and scope that hinder the progress of the study. An In-depth theory (State of the art) governing the present study is presented with other theoretical underpinnings relating to the study is labeled as Chapter (2). Research objectives and the methodological approach are all embedded in the Chapter (3). Chapter 3 is subdivided into various segments detailing the objectives as well as the research questions and hypothesis to find the relationship with the risk components and the tendencies for the customer to engage in online transactions of used goods. The conceptual framework designed to address the problem then follows suit. Again, a detailed Methodological approach to deal with the aforementioned problem is chronologically elaborated. This includes research design and the survey of data coupled with the tool for analysis. The seventh chapter (7) of the dissertation climaxes and presents the main findings of the study especially results of both conjoint and the subsequent data mining analyses (Cluster and Association Rule Analyses). Finally, the discussions and recommendations with the immense contributions of the study to science and practice and managerial implications to second-hand vendors traded on the online platform are developed based on the results of the thesis.

1.1.2 Statement of the Problem

The market for used goods has become a recognized component in the Gross Domestic Products (GDP) computation in most economies around the world, be it developed or developing countries. For instance, in 2015, the used goods market in Canada added a record value of $36 billion to the economy (CBC, 2016) representing a 2.2% share of the annual GDP. Similarly, in the USA, the market for used goods generated an annual sales figure of $9 billion in 2007 registering an increase of 20% from the figures recorded in 2002**.** In Europe, there continues to be a booming market for used goods, particularly in the automobile, antiques, vintage items and electronic goods in general. In the Czech Republic, there continues to be an increasing market for used goods. According to the reports from Czech Statistical Office (CSO), the total number of retail companies is recorded to be 127,117 in 2013 (Czech statistical Office, 2016). Out of

these retail stores, there is an estimation of approximately over 32% operating basically on used goods (Czech statistical Office, 2016). Additionally, the revenue generated out of the whole retail stores to GDP was 882,515 million Czech Crowns in 2013 and predicted to increase more in the years ahead. Out of this total sale generated in 2013, about 27% is from the sale of used goods to the revenue computation of GDP in the Czech Republic. These sales figures can be explained by the advent of electronic commerce platforms that provide the medium for the sale of used goods.

While online transactions pose several risks to the consumer, the addition of used goods, exacerbate the risks to the user. Notwithstanding the several risk factors brought about by online used goods transactions and the relative importance (weights) the consumer attaches to these factors, a scientific research in the area is very limited. This research would focus on the relative aversion-importance of pre-purchasing risks that consumers consider in online used goods transactions (market). The modeling of user perceptions and aversions to the purchase of used goods online would be conducted in a trade-off environment where there is a limited set of options or profiles for the consumer to choose from.

1.1.3 Delimitation of the Study

This research explores the pre-purchasing risk factors that tend to avert online customers in the Czech Republic in patronizing used/ second-hand goods via online. Therefore, the selection of customers to embark on the research delimits this study to only investigating the scenarios of making an attempt to hook up via online in the quest to make a purchase, specifically used goods. Again, the research is alienated from the concept of business models like business to consumer (B2C), business to business (B2B), consumer to business (C2B), Consumer to consumer (C2C) etc. models since the research emphasizes on the pre-purchasing consumer behavior. In view of the central theme of the study, the present research does not take into account the aforementioned models. Moreover, the study does not consider the post-purchase behavior of the customers. Also, because the research specifies only Czech Republic as a case study, only the citizens in the countries are randomly selected, in spite of the cosmopolitan nature of the Czech Republic. This research, therefore, excludes foreign nationals residing, either schooling, working in the Czech Republic. This gives a clear indication of assessing consumer behavior pertaining to pre-purchasing risk embedded in online used/ second-hand goods transactions; from the point of view of citizens. Hence, the validity, reliability, and generalizability of the results and conclusions become intact.

2. STATE OF THE ART AND RELATED LITERATURE WORKS

The outcomes from any scientific enquiry begins with the 'why and how' proposition. This question can be traced from the topic of enquiry, methodological approach, theoretical underpinnings emanating from some well-organized literature. The basic premise underlying this stage of the present study is to find holes in literature, and subsequently look for debates relating to the study under investigation. In view of this, this section highlights and outlines the state of the art as well as literary works relating to the study. This will unearth pertinent gaps in literature for the sake of this dissertation and ultimately go ahead to fill such gaps within the framework of the dissertation.

2.1 Overview of online shopping behaviour

Online shopping behaviour (also called online buying behaviour and Internet shopping/buying behaviour) refers to the process of purchasing products or services through the Internet. The process of buying via the internet is made up of five steps similar to those related with traditional shopping behaviour (Liang & Lai 2000). In the classical online shopping procedure, when a customer sorts to the need for some commodities or service, he/she goes to the Internet and makes a thorough research on the needed information on that particular product. On the other hand, rather than searching keenly, at times potential customers are enticed by information about products or services in connection with the felt need. They then assess alternatives and choose the one that best fits their criteria for meeting their demands. Lastly, a transaction is conducted and post-sales services offered to the customer in question. Online shopping attitude basically is meant for consumer's psychological, emotional, socioeconomic and demographical state in the light of making Purchases on the Internet.

Clearly, marketers are always on the alert of targeting consumer's buying habit. Nevertheless, online mechanism towards consumer sentiments makes it more feasible for customers to make multiple decisions on a product before purchase. Verhagen & van Dolen (2011) postulates in their model that, beliefs and convenience coupled with representational delight of the customer has a direct relationship with impulse buying of customer in question. There is a positive effect of merchandise attractiveness, enjoyment, and online store communication style, spearheaded by consumers' emotions. (Verhagen & van Dolen, 2011). Moreover, one of the basic tenets of internet marketing is to lure and win over the customer's desire to purchase, in this era of competitiveness by marketers. Constantinides, (2004) posits that recognizing the Web experience mechanisms and having a deeper meaning of their role as inputs in the

online customer's decision-making process are the first stage in developing and bringing on board a lucrative online presence, possibly the maximum impact on Internet users. Conversely, online shopping behaviour is swayed by consumers' willingness and acceptance categorized by theoretical sentiments of the customers own apparent reasons (Smith & Rupp, 2003)

Undeniably, there been has numerous studies of online shopping attitudes and behaviour in recent years. Most of these studies have emphatically probed on the factors influencing online buying behaviour giving rise to the prospects and predicaments emanating from online buying attitude. Yet, much has not been deliberated on two economies in terms of online buying behaviour of customers in that state. The Figure 1 below represents decision making of online buying of customers coupled with its antecedents of trust, perception, beliefs, and attitudes as against online shopping.

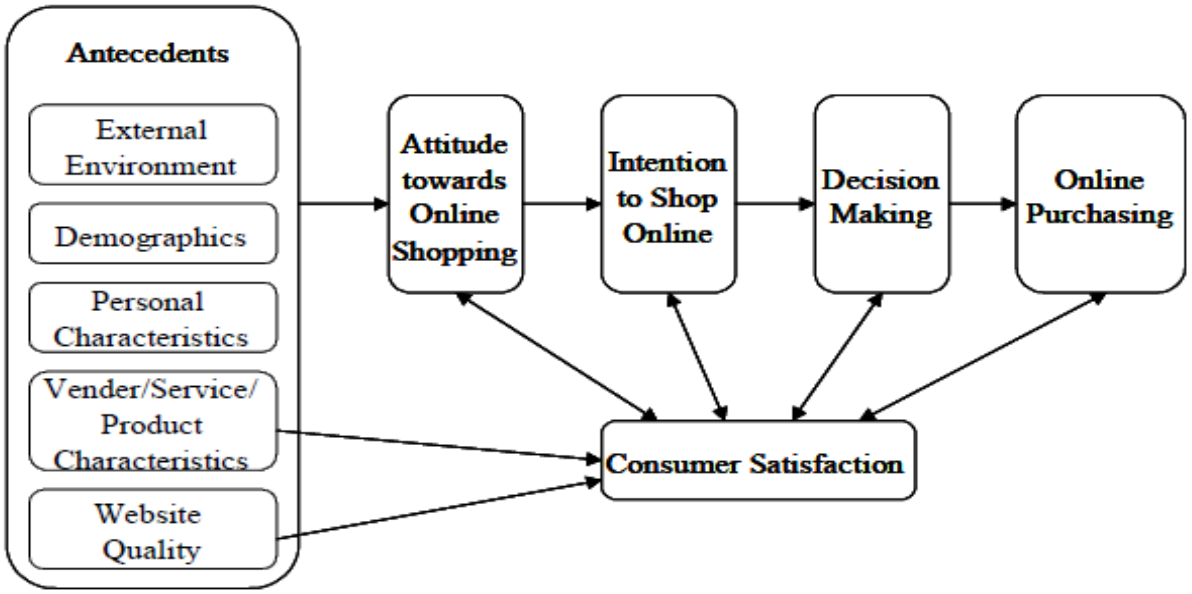

Figure 1: Research model of consumer's online shopping and buying attitude
Sources: Li & Zhang (2002)

2.1.1 Second- Hand Goods Market Vs. Online Shopping Behavior

The term second-hand goods as defined by Lane, Horne and Bicknell, (2009) is the one that is being purchased by or perhaps relocated to another user. A second-hand good is often attributed to a good that is not in the same shape as and when it was originally purchased before relaying to the current user (Charbonneau, 2008). In as much as the good in question has been used by someone or first owner and handed over to second-hand retailers (market), it leaves its original position as it was purchased. This gave birth to the higher proliferation of such second-hand market

businesses we see today, mostly touted as affordable, ready to go, with different varieties of goods situated there. The second-hand market is made up of all consumer durable neglected, sold or bartered with or without any transitional party, after discarding by the consumers (Stroeker and Antonides,1997). Second-hand retailers are mostly made up of physical stores like vintage shops/boutiques, consignment stores, charity shops among others. Lately, second-hand markets are seen as informal and are attributed to small or midsized business enterprises (Hansen, 2004; Williams and Paddock, 2003) shapeless retail setups (Gregson and Crewe, 2003) and a beneficial market in the western part of the world (Mhango and Niehm, 2005). As a matter of fact, there is a trending rise of interest, globally, in refurbished and second-hand goods/used goods market. This growing trend is irrespective of the wide-ranging obscure or complex reasons for the activity. Though what seems palpably clear as the motivating factor for the purchase of second-hand goods has to do with cost saving, in relation to a 'new' product, many other consumer considerations have also been identified in literature. A litany of such factors propelling and supporting the used goods markets from the point of view of the consumer has been listed by Guiot & Roux (2010). To them, some of the rather irregular or unconventional reasons for used goods apart from economic (price affordability or consideration) presented in the study included ethical and ecological considerations, feeling of wistfulness towards old products, and eschewing ostentation. Other experiential reasons included the love of treasure hunting old-fashioned goods, as well as the ability to express oneself by recreating new ideas out of the old (Steffen, 2016). Beyond second-hand goods and in a broader sense, other active researchers have also identified other factors driving consumer shopping choices. To et. al., (2007) in particular, have posited that whiles consumer motivations to shop online are influenced both by utilitarian and hedonic considerations, the former is a strong motivating factor for why people shop online. In particular, their study identified cost saving, convenience, information availability and selection as the propellers behind utilitarian choices. Arnold & Reynolds (2003) using a cluster analysis, did come up with a six-factor profile of hedonic consumer shopping motivations. The six profiles were adventure, gratification, role, value, social, and idea shopping motivations.

On the contrary, the internet, as an influence on consumer behavior cannot be overlooked. This stems from the fact that the upsurge of internet penetration within the entire marketing arena in the past few decades have brought in its wake, the relentless desire of consumers to embark on transactions online. Alturkestani, (2004) has opined that transactions or shopping online could be defined as the way and manner customers use the internet to search for information that relates to a particular product, and also

to make trade-offs with the mindset of finalizing a purchase transaction. Online shopping or transactions, deals with how internet users, in general, make retail purchases with the aid of internet connectivity (Swinyard and Smith, 2003). To Donthu and Garcia, (1999); Soopramamien and Robertson, (2007) numerous studies of active researchers have provided empirical evidence that indicates that customers who shop online are more likely to behave differently in the overall shopping decision as compared to those who shop through the conventional brick and mortar style.

The inclination and rate at which consumers are keen on purchasing online have been measured by previous studies. An outcome of one of such studies according to Lian and Lin (2008) has it that, the degree of consumer's passion to purchase online stems from the fact that customers are more likely to return to their respective websites of purchase within the next three months or during the year from the initial purchase, consequently growing or increasing their online purchase. Again, online shoppers stand the chance of enjoying multiple forms of convenience in the form of less physical effort, flexibility in terms of shopping, leniency in responding to promotions as well as advertisement, and finally accompanied by some user-friendly websites. After all, convenience is measured as and when customers make use of the internet to make purchases (Soopramamien and Robertson, 2007; Suki et al., 2008). Furthermore, particular websites with discounts on sales and other information on some particular websites which induce consumers' willingness to purchase online may be recommended by other online shoppers (Domina et al, 2012).

According to Doolin et al., (2007) previous literature have, on the contrary, detailed that customers who embark on online purchasing are less likely to reduce the anxiety due to the risk of financial cost. Doolin et al. (2007) have also restated that customers who patronize online purchasing have a higher proclivity for risk leniency. Similarly, it was discovered by Donthu & Garcia (1999) and Brashear et al., (2009) that such customers are less likely to be risk averse more than the traditional brick and mortar customers. Additionally, consumers are keen on the terms used in purchasing through the World Wide Web (www), (Li and Zhang (2002).Table 1. below presents a gist of current works on second-hand markets in line with the consumer behaviour in different context.I must emphasized that current reveiew works of the second-hand market coupled with the behaviuoral concept of the consumer is oulined in the table.That highlights, the topic, author (s),the methodological approach used in the study as well as the data set adopted for the listed studies. Non so far attempted to embark on the methodology that will be adopted in this present study. The general consensus from researchers alike governing the rampant outburst of second-hand market on the globe nowadays demands that researchers adopt a robust technique to intrinsically found out

value proposition of customers in that business, moreso when the business is bent on trading online.That is to climax that, the risky components inherent in the consumer must be unveil to assist the growth of the second-hand industry. In view of this scenario ,factors observed as pertinent in online purchasing which will be prodded further in the thesis includes perceived risk in the internet world of shopping, consumer behavior and convenience, satisfaction and predicaments from the online shopping circumstances. In the subsequent section, the theoretical underpinnings of the concept of Conjoint analysis, Assocaition rule theory and segmentation (cluster) are provided with its mathematical scenarios behind it. Risks with online shopping are delved into and finally, online buying behavior of the Czech Republic is presented.

Table 1: Review of work on second-hand goods online (Source: Author)

S/N	TOPIC	AUTHOR (S)	METHODOLOGY(S)	DATASET
1	Consumers' initial trust toward second-hand products in the electronic market	Sang M and Sang J (2005)	Structural Equation modelling	College students
2	Second-Hand Spaces: Restructuring Retail Geographies in an Era of E-Commerce	Parker & Weber(2013)	Qualitative Enquiry	Survey and Interview from Chicago retailers
3	Internet exchanges for used books: An empirical analysis of product cannibalization and welfare impact	Ghose and Smith (2006)	Qualitative Enquiry	Repository of Amazon.com
4	Internet exchanges for used goods: An empirical analysis of trade patterns	Ghose (2009)	OLS Regression models	Panel Data from Amazon
5	Reverse logistics method for recapturing value of used goods over internet exchange portals	Abhyanker (2006)	Structural Equation modelling	Internet Exchange Portal
6	Facilitating internet commerce through	Woolston (2001)	worldwide web mapping module with hypertext markup	electronic database of data records

	internetworked auctions		language (HTML) format	
7	Internet exchanges for used digital goods	Smith & Telang (2008)	Qualitative Report	Repository of Amazon.com
8	Asymmetric information, adverse selection and online disclosure: The case of eBay motors	Lewis, G., 2011	Logistic Regressions	data from eBay Motors

2.2 The Czechs and Online Shopping

Online shopping in the Czech Republic is traced back to the middle of the 1990s and was orchestrated by a group of Information Technology (IT) specialist who transformed American-styled creeds into a reality (Redakce, 2013). Recent works of Redakce (2013), attest to the fact that, the turn of events in the Czech Republic regarding sales, retailers, and marketing, in general, became "flooded" in the millennium year, with customers churning away from their usual brick and mortar stores because of the conditions meted out to them. As a matter of fact, the startling revelation of Internet retail took turns from this era, since wholesale and retail had been entrenched. It was easier for retailers to use their existing stores coupled with their vast array of experience in computers to penetrate Internet retail as earlier envisaged. The initial establishment of Internet retail saw Alza, Czech computers, and Mironet entering the game of Internet retail in the Czech Republic (ČTK ,2013)

In mid-2012, the Czech Statistical Service reported that almost 2.6 million persons, representing 31% of the entire population in the Czech Republic and 44% of the total number of Internet users in the country, claimed they had shopped online in 2012 (Czech Staistical office, 2016). According to Czech News Agency (2013) the number of online shops in the Czech Republic increased from 16% to 37% over the last two years. As part of the rapid penetration of Czech customers in online transactions, a study on e-commerce is carried out regularly to monitor the inflow and outflow of customers in collaboration with notable companies from the Czech Republic, such as Gemius, Centrum Holdings, and Seznam.cz. The rationale of the annual study is to probe into the distinction between Czech Internet users and the tendency of these users to shop online. Some of the valuable facts retrieved from this study are not limited to the fact that Czech Internet users are driven to shopping each and every time they are online. Women were also seen as the most inclined online shoppers in terms of gender

distribution; approximately 60% or more take advantage of Internet shopping in the Czech Republic (Pilik, 2012). Again, the report indicated that Czech Internet users who have already transacted business online continue to grow unprecedentedly. Moreover, a sizable proportion of Internet users start shopping for something new online. Yet, the report further opines that almost three-quarters of Czech Internet users have not finished a transaction or purchase through the Internet for at least once. On the contrary, FinExpert.cz (2015) in their research reiterated that the increase in demand for online shopping has shown a wider margin of growth in the number of Internet shops in the Czech Republic within the last five years. Their research further estimated that the current number of e-shops has grown by about 80% since 2010 and that nearly 37,000 e-shops operate on the Czech online market at the moment, including used goods shops traded online. Unarguably, almost two-thirds of customers first link offers regarding price with different online stores before making the final decision. Yet, 18% of such Czech Internet users are dedicated to same e-shop, in the case of a widely acclaimed conservatism among Czech customers might affirms the notion that online customers stay faithful to the service with the intention that their required demands are rightly met without any havocs (Mediaguru, 2015). An annual study of E-commerce in the Czech Republic championed by the company Gemius (2016), indicates that more than 90% of Internet users embark on online transactions, denoting a swift increase of 6% juxtaposing that of the last two years. The population of Czech Internet users who took part of the survey, made use of the Internet very frequently.With 92% of them connecting to the Internet almost every day, and as less as 6% hooking up on the internet for purchase several times a week. It cannot be gainsaid that Internet users only hook up via online with the intention of saving money but also the availability of the service at the comfort of their home plus home delivery of goods being offered, which helps save the time. Saving time is a necessity for online buyers and hence, they take clue of that when shopping via the Internet. Approximately three quarters of Czech Internet users have resigned their decision from completing at least one online purchase and at least 13% of respondents always completed their purchase during the survey by Gamius. With reference to the choice of services, depending on which users decide to buy on the Internet, almost two thirds first relate offers of different e-shops and rationally chooses the best of them. Gemius (2016) again recorded that online sales in the Czech Republic grow likewise to online sales in the whole Europe by a stipulated rate of 15 - 20%. Considering the results presented, it can be attested that that e-commerce is one of the main engine of economic growth. This fact is supported by the works of Uďan et al. (2016) which asserts that the total turnover of Czech e-shops in 2015 is estimated to be 81 billion. CZK, with a 20% increase more compared to the figure attained in 2014. Given the

fact that, online stores make up as less as 8% of all retail sales there is an obvious a higher margin for extra growth. A report from the portal Heureka.cz (2016) recounted that a number of e-shops in the Czech Republic was diminished to about 36,800 with a corresponding increment in sales, indicating a readjustment of market forces. Extracts from a report of a company Acomware (2016) showed that 78% of e-shops augmented their turnover whiles 84% of e-shops anticipate a turnover increase in 2016.Again, mobile devices and optimizing websites for online transactions have become a vital element for local purchasing. With the number of visits to online stores via mobile devices rising steadily and accounting for more than 30% of site visits, this has resulted in a twofold upsurge compared to 2014 (Heureka.cz, 2016). Recent research works by Pilik et al (2017) also attested to the magnitude of online buying behavior of customers with the simple reasoning as comfort and convenience for all aged grouped in the Czech Republic.Again, the works of Pilik et al (2017) elicited that the Czech Republic online consumers have caught up with her sister countries in Europe and the world at large in the area of internet usage; coupled with online shopping whiles the commercial capabilities will grow steadily.

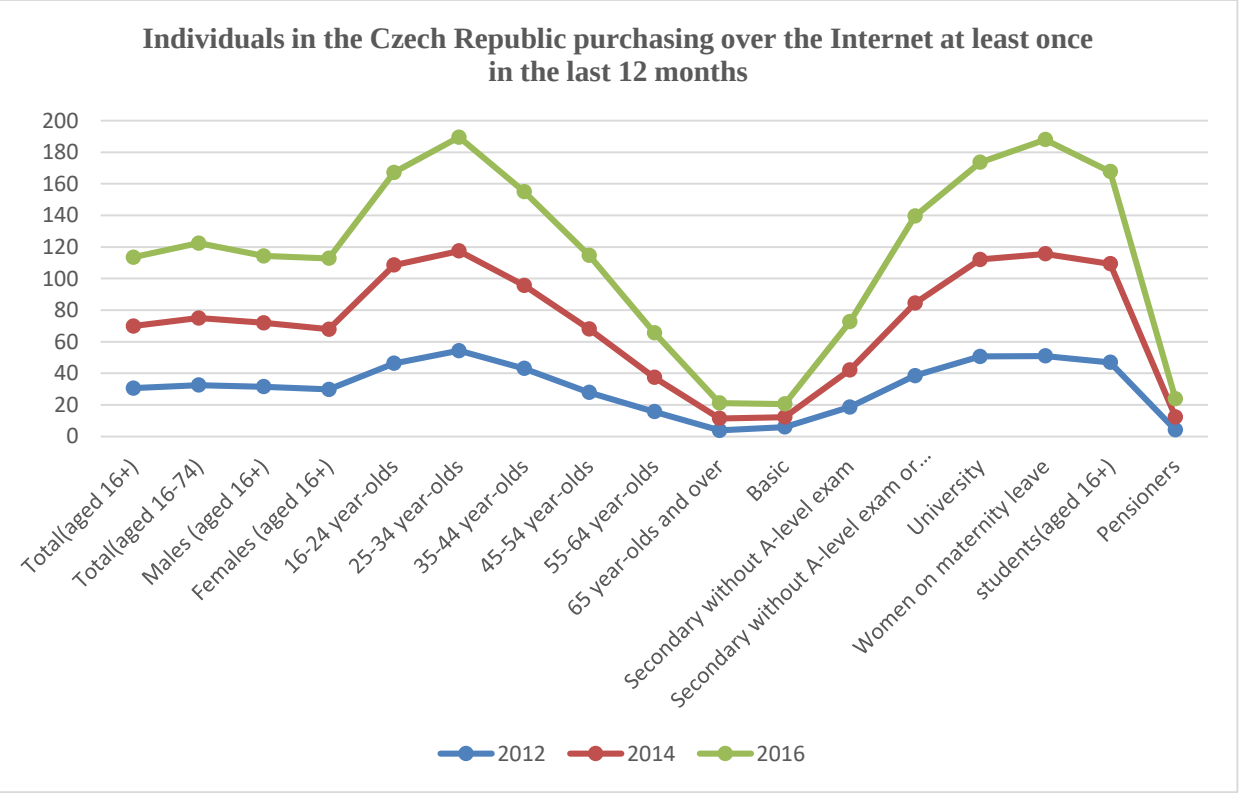

Figure 2: Individuals in the Czech Republic purchasing over the internet
Source: Czech Statistical Office cited in Eurostats (2016)

According to the Czech Statistical Office cited in Eurostats (2016) in the second quarter of 2015 nearly 3.7 million Czech inhabitants made an Internet purchase. In the age group of the adult population aged 16+, it represents nearly 42% of the total

population of the Czech Republic and 55% of the total number of Internet users. The accessible statistics emphasized that the most beneficial group within the online shopping fraternity are attributed to women on parental leave, as practically 65% of them shop online.

A quick preview of Figure 2 affirms the fact that, there has been a tremendous change in online shopping since 2012. Within the age brackets in the years, there has been a vast upsurge in online shoppers among Internet users, by hundreds of percent. It can be deduced that most recurrent online buyers are individuals hooked around the ages of 25 - 34 years representing (66.9%). Moreover, the group of seniors, most probably ages that lies within the brackets of over 65 years of age, demonstrates a certain sharp increase.With this turn of events, it can be thus ascertained that shopping via online cannot be attributed fully to the entire younger generation but rather all manner of age groups.

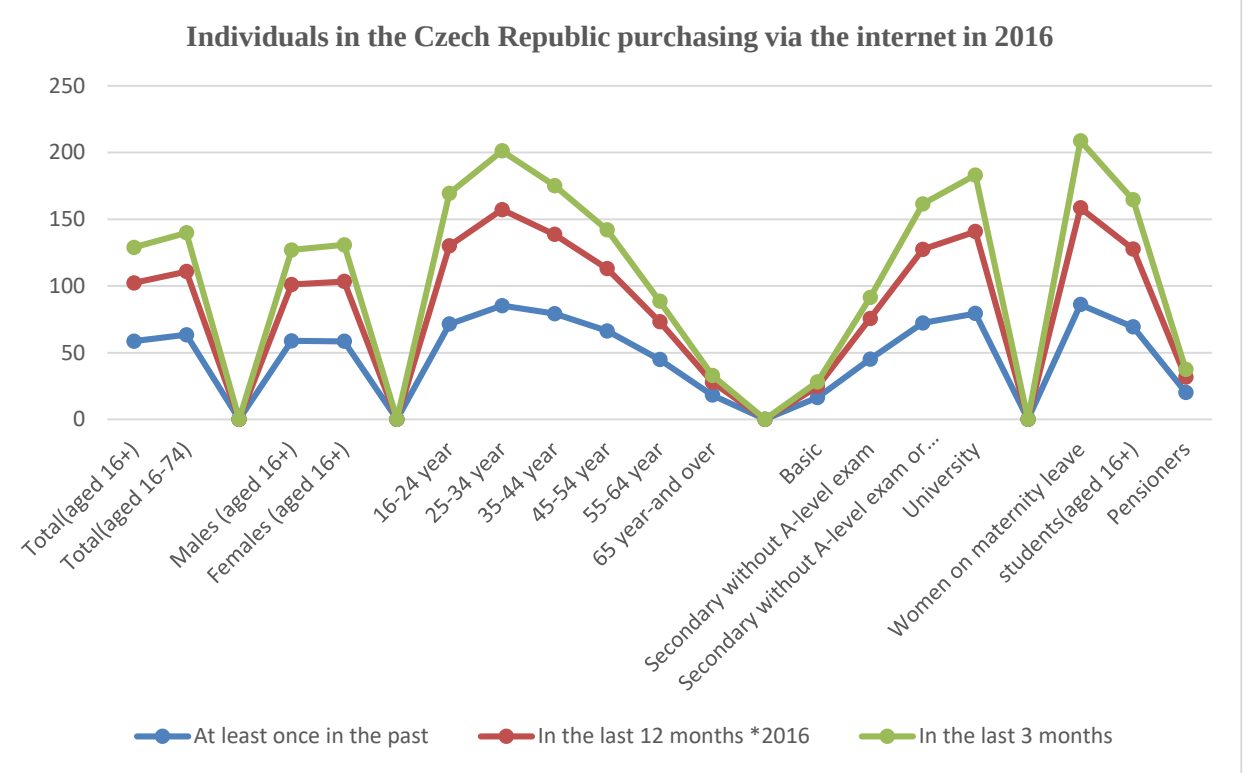

Figure 3: Demographics in the Czech Republic purchasing via internet
Source: Czech Statistical Office cited in Eurostats (2016)

Latterly, online buying behavior of individuals in the Czech Republic cannot be underestimated. As seen from the Figure 3 above, even as online customers keeps swinging with at least the past few months.The age bracket representing the millennial group of 16-24 has taken the lead in online transactions in the last three months prior to the research conducted by the Czech statistical office (CSO).According to the Figure

2, the University students comprising bachelors, Masters, Doctoral or Postdoctoral students have unarguably shopped via online with the last three months.

The setting of this exploratory study, the Czech Republic, seems to stand tall among other Central European sister countries in terms of infrastructure and market size as well as in the total global position of the online retail market (stores). This supports the reliability of the study conducted by Hutchings, Best and Mahmuti,(2016)that positioned the Czech Republic as 33rd in the world for online buying and 20th among the list of Internet retail sales per capita of USD$217 million in 2012. Moreover, an annual survey conducted by eCommerce news(2016) indicated that in the Czech Republic there has been an increase in online transactions to more than 20% with an amount of CZK$25 billion, which is equivalent to €$925 million. The report further stated that Czech customers spent €$3 billion in their local online stores in 2016; this was estimated to double by 15% in the subsequent year.

2.2.1 The Czechs and the Online Used Goods Market

In the Czech Republic, online customers were not particularly enthused to hook up on the internet in search of used goods. They rather preferred walking into the local outlet to catch a feel for the good of their interest. However, it could be conveniently asserted that the online used goods market gained the needed prominence in the early days of internet penetration as far as the Czech Republic is concerned. The irony here is that Czechs saw it a very daunting task to shop via online and also to buy solid and exact used goods via notable or so-called big online websites that deal with the sale of both used or brand new items such as the Amazon's, the eBay's among others. Nonetheless, as the internet has kept on springing, it has also become difficult for vendors of the used goods market to broaden their horizon in terms of publicizing their goods online. The inventory in Table 3 below clearly buttresses this assertion. Again, a recent report put in the public domain by Equa Bank (2017) has revealed that almost 9 out of 10 Czechs in one way or the other sell or buy second-hand goods using the online mode. The report further went on to explain that the ordinary Czechs buy clothes and other households with more than 500czk on a single purchase in these second-hand outlets. Clearly, the traditional notion of the ordinary Czech not voluntarily throwing things out remains the most vital rationale behind this view. Other extracts from the survey carried out by Equa Bank (2017) have shown that used goods online are becoming rampant in the Czech Republic. This according to the report emanates from the affordable price tag on such goods especially mobile phones and electrical appliances. Almost 93 percent (93%) of Czechs sell their own second-hand items through online platforms. And one-fifth of Czechs are also of the view that to get rid of unsuitable

gifts it would be better to push them through second-hand online platforms for sale (Equa bank, 2017). Apart from the affordable price tag influencing the patronage of second-hand goods on online platforms, it was revealed in the survey that second-hand purchases for children were the best-especially clothes and sports equipment. The basic reason according to the report is that when getting such goods, it does not pay to get new ones and close to 43 percent (43%) of the respondents shared this view. Contrary to this perspective by the respondents, is the one that proposes that people will not want to give out money to items that have a shorter span. In view of this, the Czechs are labelled as far-sighted and fear-provoking country, as seconded by the executive director of Equa Bank, Jakub Pavel.

As evidenced from the Table 2 of inventory taken on used goods traded online on the Czech market, it can be attested that more possible outlets are on the verge of coming into the Czech market. According to the research of Equa Bank (2017), the most widely selling and shopping online outlets are Aukro.cz with exactly 33 percent (33%) of their respondents connecting to that portal for purchase. Similarly, one-third of their respondents buy second-hand goods on other notable online platforms. Some respondents also echoed their claims by connecting via social media sites (Facebook, LinkedIn, etc.) for their demand for such used goods. In line with the report presented by Equa Bank, diverse millennial age groups engage in shopping over the internet for second-hand goods such as books, while ages above 54 are more attached to their usual traditional style of shopping at a particular retail shops purposely for goods like antiques and so forth.

On justification of clarity and significance of the present study, Table 2 presents an inventory of used/ second-hand goods electronic outlets traded online in the Czech Republic, giving an insight into the different regions in the Czech Republic with their kind of used electronic goods traded online, along with their respective websites. It must be noted that not all second-hand goods traded online have been listed as inventory for the discussions, this is because of an upcoming ones and others that do not offer adequate descriptions on the kind of second hand goods to enable customers make specific inquiries.

Table 2: Inventory of used goods outlets traded online in the Czech Republic

Names	Websites	Type of goods	Regions
Z druhé ruky	https://elektro.zdruheruky.cz/		Moravskoslezský kraj
Diskontní nákupy Otrok	https://www.diskontni-nakupy.cz/		Zlinský Kraj
2jakost	https://www.2jakost.cz/		Středočeský kraj
OKAY	https://www.okay.cz/maxisleva-rozbaleno/		Moravskoslezský kraj
MALL CZ	https://www.mall.cz/listy/bazar		Hlavni město Praha
Bazar - Miloslav Dundy	http://www.bazarliben.cz/		Hlavni Město Praha
Elektro Solid	http://eshop.elektrosolid.cz/katalog/iijakost-52/		Hlavni Město Praha
Damil elektro	http://www.damil.cz/cs/shop/		Liberecký kraj
ACE elektro	https://www.ace-elektro.cz/		Hlavni město Praha
DOMO elektro	https://www.domo-elektro.cz/kategorie-155-vyprodej-rozbalene-zbozi-2-jakost		Plzeňský kraj
Rozbaleno.cz	https://www.rozbaleno.cz/	Electronic goods	Hlavni město Praha
Giga Computer	https://www.gigacomputer.cz/b-kategorie/		Ostravský
Repasy EU	https://www.repasy.eu/		Plzeňský kraj
IT Bazar	https://www.it-bazar.cz/		Hlavni Město Praha
Promo Comp, s.r.o.	http://www.promocomp.cz/		Hlavni Město Praha
Eurotech trade, a.s.	https://www.eurotech.cz/		Pardubický Kraj
Slach CZ, s.r.o.	https://www.superlevnapc.cz/		Jihočeský kraj
Giga CZ, s.r.o.	https://www.terastore.cz/		Hlavni Město Praha
Mader, s.r.o.	https://www.mader.cz/		Liberecký kraj
Correct Computers, spol	https://www.c-c.cz		Plzeňský kraj
Mobil pohotovost, s.r.o.	https://www.mp.cz/		Hlavni Město Praha
Počítárna, s.r.o.	https://www.pocitarna.cz/		Moravskoslezský kraj
SUPPORT GROUP s.r.c	https://www.repasovnik.cz/		Olomoucký kraj

NAMES	WEBSITES	TYPE OF GOOD	REGION
Second hand Land	http://www.second-hand-textil.cz/cz/o-nas/		
Textile House	http://www.textilehouse.net/		
Crashily	http://crashily.com/		
Oblečení švýcarsko	http://www.oblecenisvycarsko.cz/		
Malé černé	https://www.facebook.com/		
Naty šaty	https://www.facebook.com/natalky.saty/	clothes	
Mint	https://mintshop.cz/collections/vintage		
Fifty-fifty	https://www.facebook.com/		
SLOW bazaar	https://www.facebook.com/slowbazaar/		
Charley PRAHA	http://www.charley.cz/		
Mujoutfit.cz	https://www.mujoutfit.cz/		
Trh knih	https://www.trhknih.cz/		
Antikvariáty.cz	http://www.antikvariaty.cz/		Hlavní město Praha
Můj antikvariát	http://muj-antikvariat.cz/		
Antikvariát Dlážděná	http://kusy.info/		
Absi	https://www.absi.cz/	books	
Antikvariát Motýl	https://www.antikvariatmotyl.cz/		
Antikvariát Eva Kozáko	http://www.antikvariat-ucebnice.cz/		
Vltavín	https://www.antikvariat-vltavin.cz/		
Antikvariát Valentinská	https://www.valentinska.cz/		
Antikvariát levné knihy	http://www.antikvariat-levneknihy.cz		
Czechantik	http://www.czechantik.cz/		
E-antik	https://www.eantik.cz/	furniture, art, jewelry	
Antikpraha.cz	http://www.antikpraha.cz/		
Antik Mikšík	https://www.antiquemobel.cz/		
Autobazar-Auto ESA	www.autoesa.cz/		
Autobazary Praha	www.arho.cz/leasing-aut.html	Used cars	
Autobazar online	www.prodejauto.eu/inzerce/vozidel		

NAMES	WEBSITES	TYPE OF GOOD	REGION
K-fashion	http://www.kfashion.cz/gallery/index.php		Jihomoravský kraj
Second-hand.cz	http://www.second-hand.cz/		Moravskoslezský kraj
UNIMODA	http://unimoda.cz/		Jihomoravský kraj
Charley ZLIN	http://www.charley.cz/		Zlínský kraj
Charley Olomouch	http://www.charley.cz/		Olomoucký kraj
Charley BRNO	http://www.charley.cz/		Jihomoravský kraj
Second hand Komtesa	http://secondhandkomtesa.cz/	clothes	Zlínský kraj
Fashion Princess Kate	http://www.secondhand-online.cz/kontakt		Jihomoravský kraj
Second Hand Iva	http://www.secondhand-iva.cz/		Středočeský kraj
Stropecekk	https://www.stropecekk.cz/		Ústecký kraj
Moda Lucia	https://www.moda-lucia.com/secondhand/		Jihočeský kraj
Druhé Ruce	https://www.druheruce.cz/		Zlínský kraj
Mujoutfit.cz	https://www.mujoutfit.cz/		Hlavní město Praha
MEGA SECOND HANI	https://www.megasecondhand.cz/		Královéhradeský kraj
Shiori	http://www.shioriantikvariat.cz/		Jihomoravský kraj
Antikvariát Fryč	http://antikvariat-fryc.cz/		Liberecký kraj
Antikvariát Beneš	http://www.antikvariat-benes.cz/		Plzeňský kraj
Antikvariát Jitky Čížkov	http://www.antikvariat-domecek.cz/		Liberecký kraj
Antikvariát 390	http://www.antikvariat390.cz/		Královéhradeský kraj
Atlas Alfa	http://www.antikvariat-atlas.cz/		Olomoucký kraj
Antikvariát Lovosice	https://www.antikvariatlovosice.cz/	books	Ústecký kraj
Ve Dvoře	http://www.vedvore.cz/		Plzeňský kraj
Eantikvariát	http://www.eantikvariat.cz		Moravskoslezský kraj
Antikvariát u Bouchalek	http://www.antikvariat-kniha.cz		Olomoucký kraj
Antikvariát u Kostela	http://www.antikvariatukostela.cz		Ústecký kraj
Antikvariát Ostrava	http://www.antikvariat-ostrava.cz		Moravskoslezský kraj
Knihárium	http://shop.kniharium.eu		Moravskoslezský kraj
Autobazar-Big Cars	www.bigcars.cz/		Ostravský kraj
Až 8000 aut v AAA Auto	www.aaaauto.cz/		Zlínský kraj
Sauto	https://www.sauto.cz/		Ostravský
CARS.CZ	www.cars.cz/		Ústecký kraj
Auto.Bazos	https://auto.bazos.cz/veterani/30/		Zlínský kraj
Superauta	www.superauta.cz/		Moravskoslezský kraj
Tipcars	https://www.tipcars.com/		Ostravský
Autobazar Olbbramovice	www.davocar.cz/		Středočeský kraj
Pyramida Pruhonice	www.pyramidapruhonice.cz/		Středočeský kraj
JKCARS	www.jkcars.cz/financovani/		Jihomoravský kraj
Koupě vozu na úvěr, Voz	www.autobazar-umakra.cz/uver		Ostravský
Autobazar AUTOKRS	www.autokrs.cz/		Plzeňský kraj
Autobazar A&P AUTO (	http://www.autogrna.cz/	Used cars	Středočeský kraj
Autocentrumbavoryne	http://www.autobvr.cz/		Středočeský kraj
Auto AI	http://www.autoa1.cz/cs/		Olomoucký kraj
AutoRock Pšenka	http://autorock.cz/		Zlínský kraj
Autobazar Vysočina	http://www.autobazarvysocina.cz/		kraj vysočina
Garos Auto	http://www.garos-auto.cz/autobazar		Liberecký kraj
Auto J&E s.r.o.	http://www.autoje.cz/		Jihočeský kraj
Autanet	http://www.autanet.cz/		Královéhradeský kraj
Auto -moto firmy	https://www.firmy.cz		Královéhradeský kraj
Autíčka s.r.o.	http://www.autickasro.cz/		Plzeňský kraj
Agrotec Auto	http://www.agrotecauto.cz/		Jihomoravský kraj
Auto Cardion, s.r.o	http://www.autocardion.cz/		Jihomoravský kraj
Auto Bačina	http://auto-bacina.cz/		Pardubický Kraj
Antik galerie Taranis	http://www.taranis.cz/		Zlínský kraj
Bazaruh	http://www.bazaruh.cz/	antiques	Zlínský kraj
Royal-antique	http://www.royal-antique.cz/		Zlínský kraj
Starožitnosti Zlín	http://www.starozitnosti-zlin.cz/		Zlínský kraj

As previously indicated, used goods traded online in the Czech Republic are presented in this sections (table 2) by providing an updated summary of used goods outlets currently trading together with their respective online platforms(websites). Table 2 provides adequate understanding of the name, type of goods, as well as the region situated in the Czech Republic. Overall, Hlavni Mesto Praha, being the capital of the Czech Republic recorded most of the second-hand outlets with specifically trading used goods in the category of clothes, books, furniture, art, jewellery, used cars. Zlinsky region had the most recorded second hand good regarding antiques.

2.3 Theory of Perceived Risk

The theory of perceived risk embraced in literature for academic works today was first coined by R. A Bauer (1960). His notion on this academic realism was stemmed from the fact that consumers are seen as a role of *uncertainty* and its *consequence* (i.e. Bauer's two-dimension theory of risk). According to the works of Bauer (1960) consumer behaviour is characterized with an unknown risk, in the sense that consumers' actions and inactions towards the purchase of a product will eventually lead to the concerns emanating from predicting the outcome. Sometimes, such occurrence tends even to get in the bad taste for the consumer in question. In the broader sense, perceived risk related to consumer behaviour may in some way thought of as the consumers' idiosyncratic perception and belief geared towards a loss at a particular time; which intends affects his/her decision to embark on a transaction. Therefore, when the individuals' expectations far outweigh the risk baseline of such individual in question, there is the tendency of negativity pending on such a customer to embark on transaction or purchase of the product (Venkatesh and Goyal, 2010). Again, one of the fundamental element of buying behaviour of customers is the risk in-built in the consumer (Pappas, 2016). This means that, the reason of consumers' alternate decision towards a particular product as opposed to the other is basically attributed to the ultimate outcome of such a product. Alternatively, other renowned scholars in the academia has shed more light on the issue of perceived risk, with some looking at the unfavourable outcome springing from risks from two different perspectives, thus *importance of loss* and *instrumental importance* (Maciejewski, 2012). As the debate of perceived risk hinges on in academia day and day out, notable researchers in consumer behaviour are expressing doubt about the real definition given by Bauer's. Among some of the authors includes Sjoberg. To Sjoberg (1980) risk must be well demonstrated with the outcome of both *probability* and *consequence.* He holds the view that consumer risk is a highly complex situation which must be treated as a multidimensional facet and not to be seen as a mere two-dimensional category as championed by Bauer. However, research has shown that most Polish authors dealing

with consumer risk attributes tends to corroborate with the view of Bauer in his two-dimensional theory of risk, notably *uncertainty* and *consequence* as earlier stated.

In the area of perceived risk relating to shopping, Cox and Rich (1964) posits that women are more inclined to risk than men. This was revealed through their study; by hypothesizing that telephone shopping impacts on some iota of risk to the customer and hence deter many women from embarking on this kind of transaction. Conclusions made in respect of their study attested to the fact that '*high perceived risk is more likely to be a constraint in hooking up the telephone to make purchase'* (see Cox and Rich ,1964 p 495). It was also asserted in their report that '*the higher the morale attained in making a single decision for a purchase, the higher significant of such decision are, and the higher indeterminate the consumer in question is attributing such decision without visual inspection, hence the higher the magnitude of potential demand of the product in question via phone*' (see commentaries Cox and Rich ,1964 p 505).
Other researchers also suggested an alternative model for explaining perceived risk theory (*Risk attribution theory*). One of such framework is propounded by Hönl, Meissner and Wulf, (2017) in their study of '*'Risk attribution theory: An exploratory conceptualization of individual choice under uncertainty*" The framework laments on how prospect theory are blended with the risk attribution theory in explaining individual risky behaviour. It further highlights on arguments cropping up from the school of thought of prospect theory and cognitive affective decision –making. The model argues and concludes that there exist three major drivers or forces that influence individual risky behaviour. These includes contextual factors; cognitive risk attribution and affective risk attribution. These aforementioned attributes are elaborated to bring out the interconnections between individual risk behaviour. The framework is shown in the figure 4

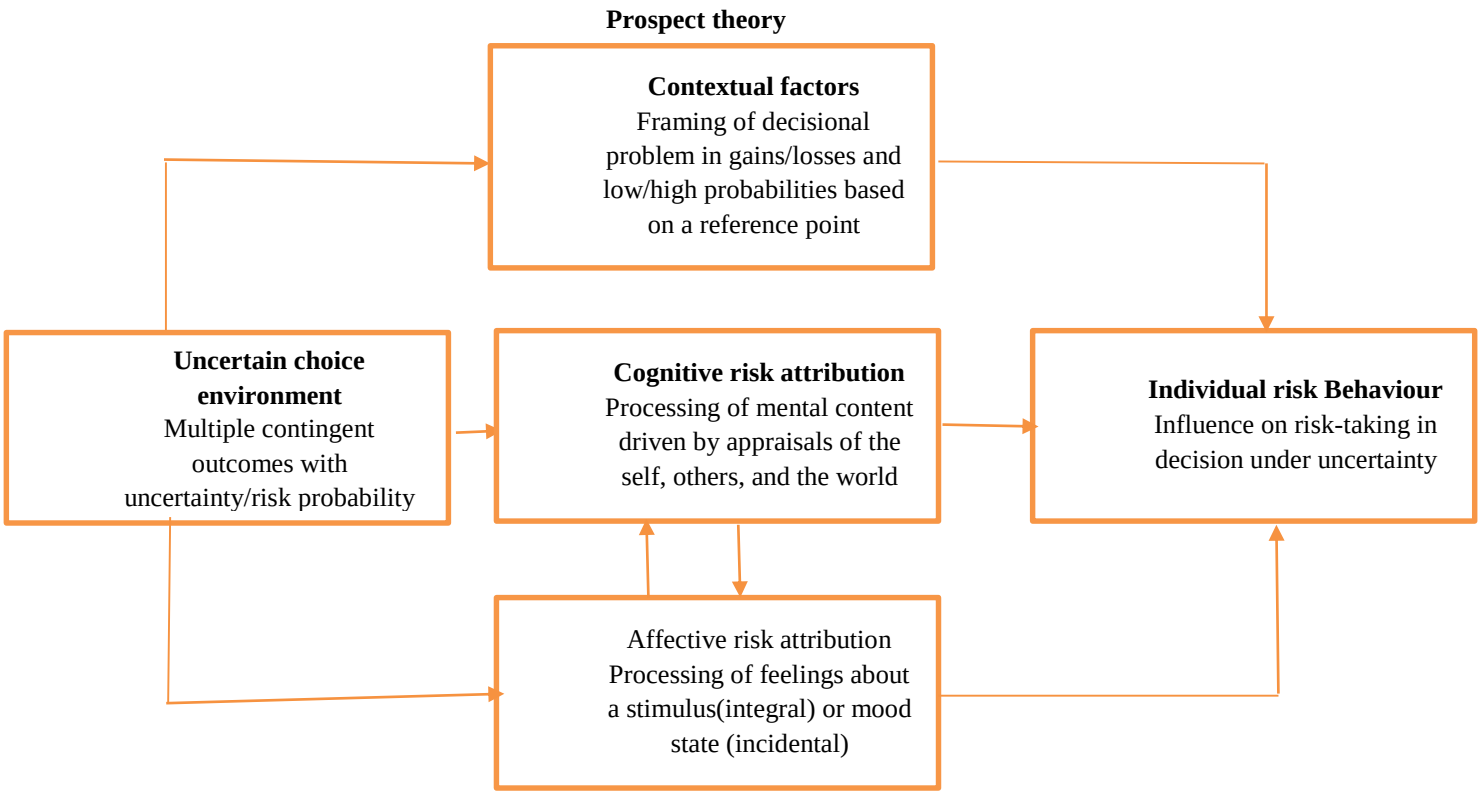

Figure 4: Determinants of individual risky behaviour
Source: Hönl, Meissner and Wulf, (2017)

2.3.1 Perceived risks in online transactions Vs. Risk in purchasing second-hand goods

Perceived risk online transaction is often termed as sensitivity of uncertain and utmost liability associated with hooking-up via website (Alcántara and del Bario-Garcia 2015). Numerous academic giants dealing with consumer behaviour and the antecedents of risk have elaborated the impediments of risky situations consumers find themselves in as a first user–website interface; together with rigorous assessment done by the user in their quest to get the necessary information before any purchase can be initiated (see Chung ,2011; Razak et al, 2014). Even with this rigorous assessment, perceived risk in the case of online transactions still remain a problem to the consumer as compared to the traditional 'brick and mortar' channels, with a multiple of reasons (1) there is no a monumental evidence that the user in question making use of the internet will acquire the goods offered on the website (2) absent of sales person to seek information on such products becomes a canker to the consumer; and (4) the magnitude of distance between the vendor and the shopper poses a problem (Kim et al, 2008). In as much as available websites remain the major means in online transactions in general, the significance of consumers' awareness of risk is in no doubt; hence this has triggered much attention to academic debate on how best efficient and

effective websites can be maintained (Flavian, Guinaliu and Gurrea, 2006).This claim has been supported by Kim, Kim and Shin (2009) in their research showing that perceived risk holds a crucial attribute that tends to impede the decision of users in the quest to visit or revisit a particular website. In the same vein, Tingchi et al, (2013) shed more light on how consumers conceive perceive risk as significant, in an attempt to accept a particular website. Alternatively, Blain, Levy, and Ritchie (2005) suggested in their study that vibrant branding sends a strong signal to the user in question and hence tends to minimize the subjective level of perceived risk ingrained in the user. However, the works of Hong and Zhu (2006) earlier on attested to the notion that indeed e-Commerce transactions in general are attributed to the technological forces or drive. Thus, the requisite infrastructure coupled with the risk emanating from the trading partner providing the service to the company. Again, perceived risk is seen as an autonomous situation that negatively impacts on the buyers' zeal to transact online or not (Feartherman and Pavlou, 2003). As a sequel, Slimak and Dietz (2006) affirms that perceived risk does impacts on the personal decision and keenness to open up information via online. This means that perceived risk climaxes the debate of negatively becoming a hindrance to the user in transacting in e-Commerce environment.

In line with these assertions, a number of research works have attempted to find out the associations inherent in risk perception of new shopping channels of the consumer and the way and manner of going about this said means (Bhatnagar et al., 2000). According to Tan (1999), consumers often tend to have and perceive some risk in making use of the internet to purchase as opposed to the non-internet means of purchasing. Again, in his research, he gathered that risk averse consumers are more likely to avoid the usage of internet in shopping. Javenpaa and Todd (1997) also reiterated in their findings that consumers risk influencing their purchasing behavior pertaining to online shopping in general. Contrary to the claims above, Vijayasarathy and Jones (2000) in their study found out that consumer risk affects both the shopping behavior on online shopping and the intention to embark on online shopping. As a matter of fact, various risks are perceived in the quest to make an online purchase from the point of view of the consumer. Some of the likely risk posed by the consumer include risk of product defects, security and privacy risk, financial risk, psychological risk among others. Though the significance of trust, financial, security etc. is mainly touted as some of the key issues debated in the online environment, there is still limited empirical and theoretical support in the quest to purchase used/second hand goods online. Besides, the magnitude of such perceived risk that goes with the tendency to purchase a particular product or service, thus delimit the consumer even the more to hook-up for those transactions. This is stemmed from the fact that consumers'

perception is ultimately the driving force of his/her decision. As earlier indicated, the idea of perceived risk has been vastly highlighted and elaborated with significant conditions at a particular point in time given the context of e-commerce environment both in academia and the industry at large (see San Martín and Camarero, 2009 Doolin et al, 2007;). The recent works of Featherman and Pavlow (2003) also identified some perceived components of risks associated with the tendency for customers to engage in online transactions, namely: Performance risks, financial risk, time risk, psychological risk, social risk, privacy risk. Alternatively, Loper-Nicolas and Molina-Castillo (2008) also presented in their research some likely risks from the point of view of e-commerce in general as technical, service as well as delivery risk. In all these developments, the perceived risk associated with the tendency of connecting via online in search of second-hand goods do poses similar but different risk. Thus, apart from the perceived risk of embarking on online transaction, the tendency that a customer might connect via online in the quest to purchase a used good also poses multiple risk and fear. Second hand good, in spite of its admiration and varied and intricate reasons for consumers seen in literature also poses a risk to the consumer in a number of ways. Tacitly, a used or second good does have a bit of risk; that customers do entangle themselves with. For instance, it is widely known that the perceived thought of buying used goods will not be in the same manner as a brand new goods might possess. The risk even intends to minimize, when the customer walks to the used goods outlet to have a feel of the good. However, in the event of transacting this same used good via online, a lot of factors do pop up in the minds of the customer. In an attempt of analysing perceived risk factors associated with online transactions of second-hand goods, Table 3 below presents some likely risks posed as a result of second –hand goods online. I must emphasize that for the avoidance of ambiguity in eliciting the possible treats of embarking on second-hand goods online. There is a distinction in the audit made with regards to both stipulated risk, thus, *Risk in online transactions; Risk in purchasing used goods* with a vivid explanation of the risk enumerated.

Table 3: Perceived risk attributes in purchasing second-hand goods online

	Perceived risk type	**Explanation**
	Risk of product defects	This attribute as a risk factor explores the risk of purchasing a defective good or making a poor decision on resulting in an inability to compare prices before purchasing hence unable to return the product in question
	Functional Risk	The risk governing functionality of the online transactions is at the core heart of

Risk of online transaction		customers. This discovers the risk customers are likely to get themselves into as a result of some limitations of the online instruments and systems for payments to be effected. Thus, the tendency that online payment will be difficult because of some possible unstable network
	Financial Risk	Fear of losing money along the way. That is credit card fraud and other unseen deductions of consumer's money is of a concern to customers. In other words the trust- worthiness in purchasing through the web/the network cost will increase the expenditure probably higher than expected.
	Economic Risk	The risk encountered because of the likelihood that fees overcharged will be attributed to the transactions made via online through suppliers or online marketers. And the disbelief that in the event of refunding, the other parties involved in the transactions (third party) will be reluctant to coordinate for reimbursement
	Security Risk	The tendency that information provided as a matter of purchasing online will be kept in a safer place without any harm afterwards. Thus, likelihood of information used in transaction will be hacked or viruses aiding to security problems. Again, the risk associated to the fact that customers account may be illegally used.
	Privacy Risk	This perceived risk type centres on consumer's private information or data. That is, the propensity that personal information can be tracked or stolen from vendor's database and use it illegally or by harming the customer.

Risk of second goods transaction	Psychological Risk	This risk dwells on the uncertainty of transactions in making online transactions or payment. Customers are sometimes not certain until the final delivery is made or sent to them. The trauma or mood the customers find himself/herself in, in a bid to embark on online transactions. The pressure and the anxiety the customer gets himself pose a risk to the customer. Again, it poses a risk of higher psychological trauma when the consumer is uncertain about the information on the site.
	Social Risk	The risk that purchasing used goods online will create some kind of loss of status in customers social group and hence create some trauma to the customer. That colleagues of the purchaser will think she /he is poor and hence posing negative comments here and there
	Health Risk	The risk of contracting health problems as a result of the used good in question purchased via online. The customer is not explicitly aware of how the good in question was used previously before displaying it online for sales. Tacitly, buying used goods online poses risk of diseases and hence some health problems especially used clothes
	Environmental Risk	Risk of degrading our environment via online used goods purchase is a fact. This risk centres on the dumping of used goods which might not be recyclable to our environment. The end result of used goods via online is abundance of refuse on our environment. It cannot be gainsaid that the numerous second goods are causing havoc to our environment of late

2.4 The Concept of Conjoint Approach

In the bid for second-hand vendors to transcend in their businesses, it is imperative to examine the value proposition of their customers given the multiple risk factors that are tacitly surrounded in an attempt to explicitly make a purchase via online. However, given the complex nature of eliciting the magnitude of risk inherent in the customer. It is viable to adopt a feasible technique such as Conjoint Approach (CA) to indirectly track these hardly unforeseen risk attributes. This is centered on the notion that customers make the ultimate decisions in terms of purchase with a variety of estimations coupled with different dimensionalities. The act of unveiling the hidden treasures of customers in terms of pre-purchasing is embedded in an integrated scenario which basically forms the core mandate of the CA. Therefore, the CA takes the surge of multiple information fused together to make a decision. With this present study, customers are, however, quizzed on an integrated attribute (risk) with respective levels in a tradeoff environment for the respondents to choose from (Herein referred to aversion (Rao, 2005). This CA approach basically is built on theoretical underpinnings of the Information Integration Theory (IIT), Utility Theory, championed by Anderson (1994) and (Stigler, 1950,) respectively. To Anderson is better for an individual to fuse a number of sources to make a general judgment or decision. The theory as proposed by Anderson and spearheaded by Louviere (1988) takes into account an arithmetical and quantitative data geared towards individual rating or rankings of responses given multiple calibers of attributes or information. In this sense, Information integration theory is characterized by three stages namely: *Evaluation*, *Amalgamation*, and *Reaction*. The ultimate disposition, in practice, signifies the maximum utility derived from this combination of attributes and levels merged together for the purpose of the research under study (Herein referred to the highest aversion that restrains the customer from initiating an online transaction specifically on used good.

CA is classified as one of the varieties of tools in mathematical psychology used to model consumer preferences. This works accurately, when respondents are presented with a limited number of attributes and characteristics describing a set of stimuli (products or services) then the method becomes particularly useful. According to Green et al., (2001) the CA approach helps to indirectly unravel hidden utilities assigned to products and services, particularly in an environment of trade-offs. The concept, over the years, has found extensive application in many disciplines, most notably in marketing research. Although the full-grown concept is credited to Green

& Rao (1971) and later by Green & Srinivasan (1978), works by Bernoulli (1954), Simon (1957), Churchman & Churchman (1961), Luce & Tukey (1964), Hoffman (1967) and Fishburn (1968), in the area of consumer preference modeling and utility theory in general, are considered noteworthy contributions toward bringing CA into mainstream research. The method has been fashioned or designed to take care of a range of different data types harvested under different circumstances. In fact, the generalizations of the CA method have brought about other variants aside from the traditional conjoint analysis (TCA). These are Choice-Based Conjoint Analysis (CBCA), Adaptive Conjoint Analysis (ACA), Max-Diff Conjoint Analysis (MDC), Hierarchical Bayes Conjoint Analysis (HBC) and self-explicated conjoint analysis (Rao, 2014). The robustness, accuracy and reliability of CA have been vouched in many test studies (Scott & Wright, 1976; McCullough & Best, 1979; Bryan & Parry, 2002; Bryan et al., 2000; Malhotra, 1982) - giving a stamp of approval to the widespread use of the conjoint analysis method.

2.4.1 Taxonomies of Conjoint Analysis

As earlier elaborated, CA is an advanced marketing approach that precisely attempts to measure the value proposition (Utility and relative importance) consumers attached to a particular product or services. The theory is directly stuck with the (Utility theory and Information Integration Theory) where consumers are bent on measuring the satisfaction acquired from consuming a particular good or service (Fishburn, 1968). A detailed of different branches in its application is explained below:

2.4.1.0 Traditional (Full-Profile) Conjoint Analysis

The traditional conjoint approach is also known as the (full-profile) approach of conjoint analysis takes the form of displaying as much as a greater number of full product or service to the respondents. This in effect results in an outsized number of information from the customer (respondent) to choose from and hence minimize the burden of the respondents. Over the years, however, full-profile approach to conjoint has been labeled as the most famous conjoint approach in measuring attribute utilities (part-worth) of respondents (Lang, 2011). The TCA conjoint works by disintegrating different product descriptions to respondents for appropriateness or preference evaluations. In this case, each product (service) profile symbolizes an aspect of fractional factorial design experimental design that was carried out initially by virtue of expert opinions and the extant literature through selection (Rao, 2005). In an attempt to conceptualize the attribute pairings, the tendency of the researcher in question to relate attributes with profile preference and eventually assess or evaluate each

respondents' utility pertaining to each level of the attribute is tested. (Rao, 2005). Conventionally, the TCA method which is embraced for the present study works by breaking down preference data of respondents and computing part-worth utility values for each level under each attribute. Concurrently, the trade-offs made in the decision-making process can also be examined between the different attribute levels. The result of the modeling assigns large part-worth utilities to attribute levels that are most preferred whiles least preferred levels receive small part-worth utilities (Khufield, 2005). The part-worth utilities are subsequently aggregated to determine the relative importance (Herein referred as Aversion) decision makers (the respondents) attach to the attributes and their levels:

2.4.1.1 Choice-Based Conjoint(CBC):

The choice –based conjoint (CBC) analysis also known as discrete-choice is regarded as one of the most widely used and common form of CA. Over the past years, CBC has been utilized in the marketing research community (Alves et al, 2008; Eggers and Eggers, 2011). CBC in its approach differs from other methods used in the entire preference modelling concept. In view of its approach, it is being assessed with numerous advantages, one unique advantage of CBC is that it stimulates the buying pattern of consumers in more competitive environment. Thus, consumers draw their best option out of the binary options presented to them. However, as the magnitude of question pose to respondents increases the choice of option set from which the respondents must select also becomes burdensome (Green and Srinivasan,1990). In sum, the CBC model replicates the challenges attributed to the overall conjoint measurement or analysis. In addition to its numerous advantages, data gathering in CBC often encompasses simulated purchase decision which tends to give more reliable and simple task for respondents to make selection, either by rating or ranking. To it, the part worth utilities attained directly reflects on the particular product choice in spite of the change in ranking or rating. Therefore, the portion of assessments are directly analysed without any cumbersome assumptions. Again, the enumerated product attributes of factors or levels can be accommodated without hoovering alongside the specified brand utilities. Regarding market forecasting as one of the main conduit for marketers to succeed in the competitive environment, CBC has the urge to entrench and fill that gap for marketers. In contrast to the TCA used in the present study, CBC tends to be more flexible in its approach and deigns looking at the wide range of choice initiated in TCA. Again, whiles TCA follows a direct preference modelling approach, thus regarding the features under investigations, CBC estimates preference in a more natural setting, thus by taking cue of the magnitude of choice decision (Green and Srinivan,1978, Louviere and Islam, 2008). The reliability of CBC has been vouched

in numerous studies, for instance, the National Institute for Clinical Excellence (NICE) based in the United Kingdom in their quest to allocate and use of resources embarked on their study with the CBC methodology which proved efficient in their final analysis (Ryan, 2004).

2.4.1.2 Adaptive Conjoint Analysis

The adaptive Conjoint Analysis (ACA) in a broader sense takes a different form of conjoint analysis approach by wavering the selection of attributes handed over to respondents according to what each respondent like or fond of. The overall aim of this ACA is centered on the ability to target each respondents' highest preferred attribute and level, which intends to enhance an efficient and easier conjoint analysis interpretation (Johnson, 1991). That is to say that every package produced is classified as more competitive and will automatically yield a fruitful data for analysis.

Again, the ACA is somewhat more engaging to the researcher and hence produces the needed data for evaluation (Bergantino and Bolis, 2005). In fact, the ACA produces short but simple survey length devoid of the power of the conjoint analysis estimations (Green, Krieger and Agarwal,1991). Additionally, there exist different scenarios to adapt conjoint measurements to respondents with ACA, and the most common design of the ACA is built on how the characterized level is important to the respondent. For instance, when each package is submitted for estimation, the survey in question stimulates for the selection and therefore enhance the questions to be more resourceful (Christofor, 2008).

2.4.1.3 Self- Explicated Conjoint Analysis

The self–explicated conjoint analysis(SEC) unlike another category of conjoint approach is simple and easy to implement. It embarks on a robust procedure in its approach without making use of the full profile concepts implemented by other forms of conjoint approach. This methodology focuses directly on the assessment of different categories of a product or services. In other words, its model (SEC) probes explicitly about the preference for each feature level instead of the preference of package of features in question. In as much as the SEC approach differs from other methodologies of the conjoint fraternity, the results attained is not different from the others just that it tends out to provide reliable estimates of preference utilities. The SEC differs in its approach with the under listed reasons (Methodology):

- Firstly, the attributes and the sub-attributes (levels) are offered to respondents for rejection /elimination if they are not standard in products under any condition like that of how the ACA is done.

- Respondents then select the levels they most preferred as opposed to their lest preferred attribute
- Again, the rest of the levels governing each feature are rated in tandem with most preferred and the least preferred levels
- Lastly, we analyze how significant the overall feature is in their preference. The relative importance (part-worth) is measured with a constant sum scale. For instance, assign 100 points in between the most preferred levels of factors.
- Hence, the factor level preferred scores are subsequently weighted by the attribute significance to generate utility values for each of the attribute or factor levels.

The SEC analysis does not make use of any statistical analysis used in other conjoint approaches. This SEC approach, however, has been touted as the better approach to providing to full-profile conjoint and mostly provides small demands on the respondents eradicating some fatigue. Nevertheless, there are some limitations undergirding the implementation of SEC methodology which specifically its inability to trade off price with other attributes packages. This results in the tendency of respondents to always opt for a lower price which makes other conjoint appropriate more feasible.

2.4.1.4 Max-Difference Conjoint Analysis

Max –difference conjoint (MDC) approach presents a novel approach in estimating a conjoint preferred scenario. Here, respondents can swiftly locate the best out of the worst items in a pull of list, yet sometimes struggle to crack their desire for their choice of selection. The MDC is classified by experts as being the easiest task to start with because consumers are well informed in terms of choosing or making a relative judgment.

The MDC is an ideal approach or procedure when the decision task renders on the evaluation of the product or service choice by the respondent. In that, an experimental design is introduced to check the steadiness and accuracy of the presented sets of items. Again, there exist numerous methodologies that can be used in analyzing MDC studies. Some of them include Hierarchical Bayes Conjoint etc.

2.4.1.5 Hierarchical Bayes Conjoint Analysis

The Hierarchical Bayes Conjoint (HBC) takes a similar form from the aforementioned approaches to conjoint analysis. Thus, to assess attribute or factor level utility from the pull of data choice. (Yoon and Park, 2007). Essentially, HBC is applied in a situation where the data collection style is so large or burdensome that the respondent cannot overly provide adequate preference estimations for all the impending attribute levels.

In view of this approach to assess or evaluate attribute level utilities for each respondent, hierarchical Bayes centers directly on individual respondent assessment on vast variable attributes and subsequently uses the samples attribute level averages when the said variability is lesser. In addition, this unique approach makes way for more attributes and levels to be elicited for evaluation given the smaller or lesser amounts of data attained from the individual respondent.

2.5 Segmentation (Cluster) Theory

Clustering analysis is subjected to classification algorithm from the data mining perspectives, that is applied in selecting a data points into a homogenous groups known as clusters (Agrawal et al, 1998; Sidhu and Kaur, 2013).As earlier envisaged, Clustering techniques is one aspect of the data mining algorithms that has been broadly studied in various areas within the acdemic cycle, notable among these areas includes : statistics, pattern recognition, machine learning,aggregation and segmentation ((see Huang, 1998, Witten and Frank, 2005; Demšar et al, 2004;Wang et al, 1997; Fayyad et al, 1996; Jain, 2010),)) among others. The fundamental idea of clustering is to characterize the so-called clusters that will in effect serve the usefulness and the purpose for which the clusters were generated. This stance has been supported in line with the works of (Anderberg, 1973; Jain and Dubes, 1988; Kaufman and Rousseeuw, 1990) adducing that the clustering algorithm stands as the most popular procedure interms of applying segmentation with a huge amount of data set. Alternatively, (Sethi, 1971; Veldhius and Johnson, 1986; Jensen, 1971) claim that cluster analysis becomes significant in its applications considering the aim or rationale of the analysis.

As a matter of fact, cluster analysis has been used in a number of academic disciplines with a variety of areas within the academia and industry as a whole.Some of which includes; pyschology, sociology, linguistics etc . For example, Hartigan and Wong, 1979; Kaufman and Rousseeuw, 2009, used clustering in biology to naturally apportion animals and plants with the same species whiles Kanungo et al, (2002) also made use of clustering to separate customers from the possible risk factors concerning their respective insurance policy.Again, Librarian's, also make use of clustering technique to partition books and other journal papers in their possession as well as other study materials into homogeneous forms (Steinbach et al., 2000).

One popular use of clustering in marketing in general is typically attributed to market segmentation, specifically because of the numerous customers vendors or marketers deal with or come accross. Within the sphere of ecommerce, a number of applications have been utilized to segment or cluster respondents into a homogeneous group as have

been already mentioned. A classical example is seen from the works of (Shmueli et al, 2007) where the cluster was used to distinquish business intelligence with emphasis on e-vendor and e-shopper concept (Hasan et al, 2012) promotion strategy in terms of e-shopper segmentation.The reliability in using cluster analysis for future predictions and classifications have been supported in different forms of clustering analysis depending on such procedures‘ and its usage (Tan, 2006).Some notable forms of cluster analyses are K-means clustering, Fuzzy C- means and Mixture of Gaussians (Han et al, 2011). With reference to this study , Non-hierachical clustering algorithm (K-means algorithm) is adhered to since it provides a vivid interpretation and it works as an unsupervised learning unlike other forms of clustering algorithms. To end with, K-means algorithm works on minimizing an objective function, basically referred to as *squared error function*. This is given in the formula as:

$$J = \sum_{j=1}^{k} \sum_{i=1}^{n} \left[x_i^j - c^j \right]^2 \qquad (1)$$

Where,

‘||xi - cj||’ is the Euclidean distance between xi and cj.

‘k’ is the number of data points in the ith cluster.

‘n’ is the number of cluster centers.

2.6 Association Rule Mining Theory

The era of businesses tracking the value proposition of their respective customers through transaction-type databases are invoked now (Shmueli, Patel and Bruce, 2011).These transaction-type databases are mined with an algorithm to find out the patterns of consumer demands or specific customer buying behavior. One such mining algorithm (Data mining algorithm) is the Association rule mining approach (AR) also known as the affinity analysis.The main goal of the AR is to identify items clustered in transaction databases by virtue of retrieving and discovering interesting relations embedded in such large data set.(Agarwal and Srikant, 1994).The impact of the AR methodology, helps retailers analyze a large dataset with the intention of discovering groups of products or service that tends to be purchased simultaneously. In a broader sense, to learn more about the purchasing pattern of customers (Houstma and Swami,1995).Put simply, the AR takes the surge of *what goes with what,* effect. Over the last two decades, this algorithm has been widely used by renowned researchers in academia and the industry in general, particularly in the field of marketing. However, the full-blown application of AR methodology could be attributed to Agrawal,

Imielinski, and Swami (1993). Previous research works of Agrawal and Srikant (1994) helped in fine-tuning the algorithm into a well-known concept for utilization in academia. Other renowned scholars (Park, Chen and Yu,1997; Dehase and Toivonen, 2001) cannot be left out as championing the cause of AR methodology into the mainstream research seen today. The AR has been curbed to fit into diverse data forms feasible in different and multiple scenarios. In line with its standard usage and application, AR analysis has been adopted for many academic disciplines in a variety of areas within academia and industry as earlier indicated. For example, Becquet, et al, (2002) used association rule mining in the application of gene-expression data analysis to detect sets of genes whose expressions were interrelated, while Borgelt and Berthold (2002) also made use of association rules to analyze fragments embedded in molecules that assist to discriminate between diverse classes of molecules. AR has many different dimensions resulted in other variants apart from the most known Apriori algorithm. These include the Frequent-Pattern Growth algorithm and the Éclat algorithm (Han, Pei and Yin, 2000; Zaki et al,1997). In practice, these algorithms made up of two stages before their application. The reliability, accuracy, and strength of AR mining produced in many research areas and academic disciplines give credibility to its significant and accurate usage in any research endeavour.

Traditionally, AR mining is represented by X ≥ Y, showing when the two products (X and Y) were purchased. X then becomes the antecedent, while Y is represented as the consequent, indicating that X influenced the purchase of Y.

The association rule analysis follows the methodical steps below. The mathematical foundation of the Association rule is primarily centered on the terminologies below: With regards to the present study, the Apriori algorithm as a taxonomy of the Association is used. The Association rule theory as championed by (Agrawal and Skrikant,1994) is defined in the following:

Definition 1: Let $I = \{i_1, i_1, \dots i_n\}$ be a set of n binary attributes called items.

Definition 2: Let $D = \{t_1, t_2, \dots, t_m\}$ be a set of transactions referred to as the database.

Each *transaction* in (D) has a unique transaction ID and contains a subset of the items in I.

An AR mining assumes the form X=> Y, where X and Y are itemsets and are satisfied $X, Y \subseteq$ I. Example, {Milo, Sugar} $\rightarrow$ {Tea}. The right-hand side of the rule (X) is termed the antecedent or the premise and the left-hand side, the consequent or the conclusion.

In extracting or generating rules for analysis, we selected the variables of interest to mining the relevant relationship patterns. Variables of interest were converted into a transactional data format to aid association rule mining. Three vital metrics form the bases and deployment of association rules. These are measures of ***support, confidence and lift***.

Support:

The support of an association rule X=>Y is the percentage (%) of transactions in the database that contains both X and Y. Mathematically, Support = $\frac{frq(X,Y)}{N}$ where N is the number of transactions.

Confidence:

The confidence (Φ) for an association rule (X=>Y) is the proportion attributed to the number of transactions that are made up of X U Y assigned to the number of transactions that comprises X. This is shown mathematically as,

Confidence $(\Phi) = \frac{frq\ (X,Y)}{frq\ (X)}$

Lift:

The lift of an association rule is the fraction of the support of (X, Y) to the support of (X) and the support of (Y). In practice, the lift looks at the left-hand side rule and finds the percentage of chance of Y appearing would increase.

Lift = $\frac{support\ (X,Y)}{support\ (X) * support\ (Y)}$

2.7 Elicitation of the Research Gap

Grounded in both empirical and theoretical literature review, some gaps in the literature have been identified. The literature review revealed that there have been relatively and inconclusive studies conducted on analyzing the magnitude of aversion or utility that tends to pose threat or risk in embarking on online transactions, specifically used or second-hand goods in the Czech Republic. In the case of Czech Republic, however, studies conducted in this field have been low and in some case non-existent in the literature. At least in part, the scanty of applicable data is attributed to this major cause, such studies conducted in this area in most emerging countries as cited by (Van Damme and Vermoesen, 2009). With reference to the present study, none of the articles or studies reviewed in this area in the European context and to be

precise the Czech Republic, has emphatically suggested a practical solution to tackle the value proposition of customers so far as pre-purchase risk via online, and more explicitly used goods in the Czech Republic are concerned. Given the fact that second-hand goods outlets are more and gradually trading in online platforms day and day out. Some studies have sought to reveal what really influence the customer to purchase second-hand goods online, ranging from a number of factors (Kwarteng et al; undated, Lee and Lee, 2005). This present study seeks to suggest and propose a long-term corrective model that will inform second-hand vendors traded and yet to trade on the online platform; what really will restrain the customer from not hooking up online to make purchase and to indirectly unveil the hidden threat as well as the relative importance (aversion) of the said threat to the customer in question .The second gap recognized from the reviewed literature indicate that the overriding methodological approach used in researching these studies both developed and developing countries was basically centered on descriptive and inferential means. These techniques categorized as a non-parametric method are purposely bent on finding or analyzing the casual relationships of variables. In effect, these techniques are practically used to look at 'what caused the what' syndrome in research. This study, therefore, fills the yearlong theoretical gap by employing a different methodological or procedural approach, thus a data mining concept and the conjoint approach (Thus with the use of both parametric and non-parametric algorithms) in a novel way to assess the magnitude of risk components inhibited in respondents or customers. The overall impact and noteworthy disparities between the recommended methodology and other known algorithms used earlier by renowned researchers is the tendency of my methodology to practically and indirectly elicit the magnitude of the hidden risk (aversion) attributes that ordinarily could have been difficult to come by.

3. RESEARCH OBJECTIVES AND METHODOLOGY

The chapter talks about the objectives of the research and the methodology applied. Hypotheses are also proffered and the research design presented.

3.1 Objectives of the Study

The general aim of the research would be to expand knowledge on consumer online buying behavior. In particular, the dissertation would focus on modeling consumer aversion to pre-purchasing risk factors in online used goods transactions in a trade-off setting. This would help understand the consumers' relative utility (weight) towards a relevant set of pre-purchasing (risk) factors. In addition, the study would indirectly divulge the characteristic profile consumers are most hesitant of regarding online used goods. This would shed more light on consumer purchasing behavior in the used goods market, in the Czech Republic. The following is an outline of the objectives of the dissertation:

1. To identify relevant attributes (factors) and their respective levels using expert knowledge (interviews) and the literature in relation to pre-purchase risk factors in online used goods transactions.
2. To design a conjoint analysis model that adequately represents consumers' pre-purchasing hesitancy (aversion) intentions towards online transacted used goods.
3. To understand the other risk factors consumers would be willing to trade-off as they contemplate on purchasing used goods online.
4. To examine the influence of perceived risk factors on the decision to purchase of second-hand goods online.
5. To determine choices of each sociodemographic group in relation to the aversion (utilities) assigned to each of the risk factors.
6. To analyze the magnitude of association of risk inherent in the customer regarding the purchase of second-hand goods online.

The above objectives would be realized through an exploratory study of consumers of used goods in the Czech Republic.

3.2 Research Questions

According to Maceviciute (2007), cited in Alison Jane Pickard, research questions are stated to propel a research design into the specific study. In this research, the author will make use of the following questions to guide the study.

a. What order of relative weights do consumers attach to pre-purchase risk factors in the Online transaction of used goods?
b. What is the consumers' most averse characteristic profile regarding purchases of used goods online?
c. Which risk factors are consumers willing to a trade-off in their quest to purchase used goods online?
d. Do risk factors influence the decision to purchase second-hand goods online?
e. What socio-demographic profiles are behind each set of risk factors?
f. How are risk factors associated with the penchant to purchase second-hand goods online?

3.3 Hypothesis Formulation

i. There is a relationship between risk factors and the tendencies to purchase used or second- hand good online
ii. Risk factors associated with online transactions have a negative impact on the type of second-hand goods purchased.

4. CONCEPTUAL FRAMEWORK OF THE THESIS

The conceptual framework of this research is characterized with the inspiration of four relevant theories, namely the theory of conjoint analysis Green and Srinivasan, (1978). Theory of perceived risk (Bauer, 1960), Association rule mining theory (Agrawal, Imieliński, and Swami, (1993) and the segmentation theory Anderberg, (1973). However, the fundamental analogy of the study was theoretically championed and formulated by the tendency to unveil the hidden treasures of customers in relation to the pre-purchase risk factors governing the decision by prospective customers of purchasing used/second goods online. To this end, the conceptual framework outlines the analytical framework in relation to consumers in the Czech Republic. Although Conjoint theory is typically used in preference modelling approach, it has been used extensively in studies in other areas in business studies, specifically in the marketing disciplines with different application of the theory in diverse ways (Afful-Dadzie and Afful-Dadzie, 2017; Deng, 2007 Dellaert, Borgers and Timmermans,1995; Ryan and Farrar, 2000; Phillips, Maddala and Johnson, 2002). In sum, the conceptual framework is developed with the requisite literature detailing the roadmap and the structure along with the empirical analysis used in the dissertation. The framework however details the sectorial areas bent on measuring the risk aversion of used goods transactions online in the Czech Republic. Find below, in Figure 5 the comprehensive conceptual Framework for the dissertation.

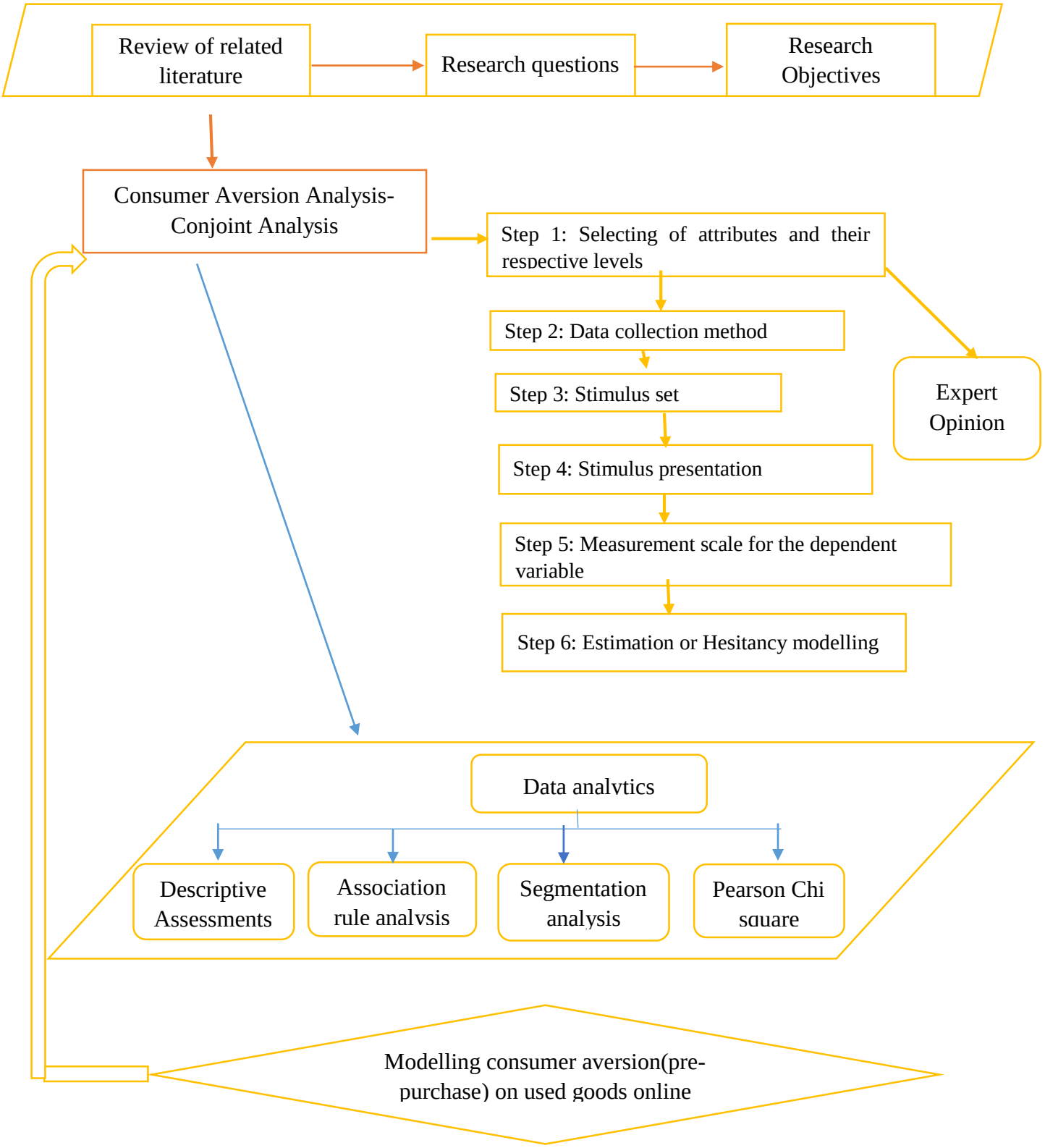

Figure 5: Conceptual Framework of the thesis
Source: Author

5. SELECTED PROCESSING METHOD

This chapter of the present study provides the chronological methodology used for the dissertation. It systematically presents an overview of the technique embarked upon to fill the gap in the literature, ranging from the design, how data is collected and subsequently furnish readers with how the data will be analyzed in tandem with the goals of the dissertation.

5.1 Research Design

It cannot be gainsaid that any appropriate research follows a comprehensive research design. The research design, which is also encapsulated in the research objectives lays down a procedural role indicating a path or channel in which the researcher must adhered in other to arrive at a concrete decision. Thus, it entails the master plan specified by the researcher in terms of data collection and its analyses to answer the already set of question posed by the researcher (Burns and Bush, 2002). The proper initiation of the research design is paramount to the researcher with the following reasons (1) Assessing the particular type of data (2) the procedure for data collection (3) the requisite sampling technique (4) the stipulated time used in the research as well as the budget that will go into the research (Hair et al, 2003). Originally, the research design is meant to ensure that the study's plan works hand in hand with the elicitation of the research problem at the beginning of the research. (Zikmund et al, 2013; Malhotra, 1999). Contemporary research design is characterized into three main headings: *Exploratory*, *Descriptive*, and *Causal* research designs (Hair et al, 2003; etc.). This dissertation makes use of the aforementioned designs to accomplish its objectives. Extant literature on methodological approaches and designs have emphasized the need to embark on several or multiple research designs to solve the problem and to fill the gaps enumerated in literature (see Burns and Bush ,2002; etc.). This is possible, because for a researcher to explore a situation sometimes end him/her up providing the descriptive background of such exploration, likewise, to also find out the casual relationship between variables, the research ends up providing the descriptive background of the research. In sum, these designs are somehow intertwined in its implementation. The present study is unarguably seen from both explorative and descriptive perspective. In that, an explorative design was used in delving into the respondents' perceptions and behaviours but with widely acclaimed advanced marketing technique (conjoint analysis) to survey respondents. Apart from indirectly exploring the perception of respondents with the conjoint analysis technique that has

been used by researchers over the years, specifically in marketing studies (see Green and Srinivasan.1968 etc.). The research went on to employ both descriptive and casual designs in the dissertation. As part of the conceptual framework (see Figure 4) of the present thesis, the present study elaborated the designs embarked upon to answer the questions posed. A step by step approach (conjoint) of the thesis is highlighted in the subsequent section of the thesis. Whiles, other designs to achieve the objectives set follows suit.

5.1.1 Research Approach

The research was centered on both theoretical and empirical analysis reflecting on the framework outlined in Figure 4 above. As can be evidenced from the framework of the thesis, the dissertation embarks on Conjoint Approach (CA) to tackle the problem. As a sequel, the Traditional conjoint analysis (TCA) as a category of conjoint analysis was used in the entire the study. This was chosen for the study because it provides accurate and vivid results compared to other types of conjoint (Kuhfeld, 2005) and as such easier to grapple and understand its operations (Orme, 2006). Conventionally, the CA method works by breaking down preference data of respondents and computing part-worth utility values for each level under each attribute. Concurrently, the trade-offs made in the decision-making process can also be examined between the different attribute levels. The result of the modeling assigns large part-worth utilities to attribute levels that are most preferred whiles least preferred levels receive small part-worth utilities (Kuhfeld, 2005). The part-worth utilities are subsequently aggregated to determine the relative importance (*Herein referred as Aversion*) decision makers (the respondents) attach to the attributes and their levels.

Mathematically, the TCA works as:
The part-worth utilities are then aggregated to determine the relative importance (*Herein referred as Aversion)* decision makers (the respondents) attach to the selected risk attributes and their levels. In practice, the traditional conjoint analysis (TCA) method models CA as a simple-effects analysis of variance (ANOVA) but with a specialized set of outputs. This is mathematically expressed in Eq. (2) where an individual respondent's stated preference regarding a set of risks attributes measured at various levels is shown.

$$Y_{c=}\ \mu + \propto_{c1} X_1 + \ldots + \propto_{ck} X_k + \ldots + \propto_{cK} X_K + \varepsilon_c \qquad (2)$$

where Y_c denotes an individual respondent's utility regarding an attribute (X_k) and μ signifying the general mean. The expression $\propto_{c1}$ is the coefficient utility (risk) for a particular level expressed by an individual respondent and ε_c is the error term. Since the CA method studies the joint effect of a set of independent variables measured on a dependent variable, the attributes (X_k) denote the independent variables, the choice (judgements) is the dependent variable (Y_c) whiles the $\propto'^s$ represent the part-worth utilities signifying the parameter estimates from the ANOVA model (Rao, 2014). Subsequently, the total utility of an attribute representing the value assigned by the entire respondents, is derived by aggregating the part-worth utilities of all decision makers (Herein as respondents). In view of this, Eq. (3) expresses an additive format of an individual respondent's utility *U* regarding an attribute (X_k).

$$U(A_i)=\sum_{i=1}^{m}\sum_{j=1}^{m_j} \propto_{ij} G_{ij} \quad (3)$$

where $\propto_{ij}$ denotes the part-worth utility (risk) estimate on the *j*-th level of the *i*-th factor (*i*=1, 2,…n and *j*=1, 2,…*m*), and G_{ij}indicates the presence of the *j*-th level of the *i*-th attribute. The relative importance (*Herein referred as Aversion)* of each risk attribute is a function of the total utility assigned by all the respondents. The attribute importance (*Herein referred as Aversion)* is essentially the weight W_j of each attribute as judged by the respondents. This is expressed in Eq. (4), where W_j is the relative importance of attribute (X_k) ; Max($\propto_{ij}$) denotes the maximum utility assigned to the attribute (the most preferred attribute level). On the other hand, Min($\propto_{ij}$) represents the minimum utility, which means the least preferred level (Green & Srinivasan, 1978; Kuhfeld, 2005).

$$W_j = \frac{Max(\propto_{ij})-Min(\propto_{ij})}{\sum_{j=1}^{t}[Max(\propto_{ij})-Min(\propto_{ij})]} \times 100 \quad (4)$$

5.2 Stimuli Construction

According to the pioneering works of (Van der Pol and Ryan.1996; Rao, 2008) and seconded by the conceptual framework of the present thesis. The stimuli design of CA follows three rigorous stepladders. These are (a) selection of attributes and their accompanying levels (b) Compiling the attributes and levels via profile generation (c) Designing questionnaire out of the profile generated with either rating or rankings procedure (d) and finally modeling preference from respondents (*Herein referred as Aversion)*

5.3 Compilation of pertinent attributes and their levels

The pertinent attributes used in this dissertation was sought from literature accompanied by expert opinions of some selected used/ second hand outlets in the Czech Republic (See Table 5). It must be noted that review was made to produce possible risk components in the pre-purchase aversion that might likely deter the customer to purchase used/second good online. But not all of these were used for the hesitancy model. This was on the premise that some selected review of the likely risk had no connection with the customer and also the customer has no control over. For instance, although the risk of product defects (performance risk) is a risk component that might deter the customer to engage in online transaction specifically used. Implicit knowledge of the customer in question should attest to the fact that, already the good is a second hand/used so there might be the likelihood that it has some defect. So it was automatically taken out of the attribute for the hesitancy modelling. These critical assessments were made to select possible attributes that really measures the tendency

Table 4: Pertinent risk attributes in online second-hand goods transactions

Attributes (Factors)	Levels	Resources
I. Financial Risk	Not concerned Indifferent Highly Concerned	Lawrence and Junnarkar, 2002, Bhatnagar et al. (2000); Jarvenpaa and Todd, 1997, Vijayasarathy and Jones, 2000), Crespo et al, 2009
II. Security Risk	Confidentiality Availability Integrity	Miyazaki and Fernandez , 2001; Hoffman et all, 1999; Wang et al, 1998; Afful-Dadzie and Vesely (2013)
III. Psychological Risk	Information Asymmetry Appearance of goods	Ghose, A., Smith, M. D., & Telang, R. (2006), Lewis, G., 2011
IV. Health Risk	Not reusable product Contracting a disease	Alam, M. D. (2015); Chipambwa, W., Sithole, L., & Chisosa, D. F. (2016).

of pre-purchasing risk and to desist from long and impractical questionnaire design. (Orme, 2010; Green et al.1998). Table 4 presents selected attributes and their levels.

As seen from the table 4 above and in **response to question 1** of the dissertation, the study settled on four attributes based on literature support and expert knowledge as mentioned earlier on. These 4 attributes *are (Financial Risk, Security Risk, Psychological Risk, and Health Risk)*. The meaning behind each attribute reviewed is expatiated below:

- **Financial Risk**: *This attribute was selected with the view and literature support as well as the expert opinions. Thus, Fear of losing money along the way. That is credit card fraud and other unseen deductions of consumer's money is of a concern to customers. In other words, the trust-worthiness in purchasing through the web/the network cost will increase the expenditure probably higher than expected*
- **Security Risk**: *The tendency that information provided as a matter of purchasing online will be kept in a safer place without any harm afterwards. Thus, likelihood of information used in transaction will be hacked or viruses aiding to security problems. Again, the risk associated to the fact that customers account may be illegally used.*
- **Psychological Risk**: *This risk dwells on the uncertainty of transactions in making online transactions or payment. Customers are sometimes not certain until the final delivery is made or sent to them. The trauma or mood the customers find himself/herself in, in a bid to embark on online transactions. The pressure and the anxiety the customer gets himself pose a risk to the customer. Again, it poses a risk of higher psychological trauma when the consumer is uncertain about the information on the site*
- **Health Risk**: *The risk of contracting health problems as a result of the used good in question purchased via online. The customer is not explicitly aware of how the good in question was used previously before displaying it online for sales. Tacitly, buying used goods online poses risk of diseases and hence some health problems especially used clothes.*

Subsequently, after determining the attributes, appropriate levels were identified for each attribute as measurable properties relevant for this study. (see Table 5). These levels attempt to capture the joint effect of a respondent's aversion in light of the limited options placed before the respondent to select from. For instance, the levels of Psychological Risk explain whether respondents/customers view *Psychological risk* from the point of *Information Asymmetry* or the *appearance of the good* in question traded online when contemplating to embark or initiate online transaction of used goods. The levels under each attribute are of significance, especially when respondents/customers decide to make trade-offs to hook up online for used goods. A

carefully selected attributes making up the profiles through the experimental design refers to the magnitude of limited options for the customer to choose from (See Table 3)

In line with the objectives and the conceptual framework elaborating the descriptive assessment of the dissertation (See Figure 5). Other relevant variables that will aid in the empirical analysis of the study includes: *Age, Gender, Educational level, Region in the Czech Republic, shop online, Type of online customer, purchase second hand online, consideration of risk factors in online transaction, Type of second goods purchased, Risk factors considered, Reasons of not purchasing second hand online, Risk factors as an influence of purchasing second hand online, Risk influence of what kind of used goods online, Risk factors ready to trade-off, affected by any risk factor, most risky factor impeding the zeal to purchase used goods online, Possible solutions to these risk factors*

5.4 Generating scenario combination (profile)

As earlier mentioned the TCA approach was used in this study. The TCA approach is a multiple regression problem where preference rankings or ratings on a set of stimuli (products/services) are regarded as observations on the dependent variable. The characteristics of the product or attribute levels become the observations of the independent variables (Orme, 2010). In the experimental design to select the number of profiles, the fractional factorial design was used instead of a full profile design. This is because full design burdens respondents and tends to give unreliable results. For example, in this study, the 4 attributes at given levels attributable to factor, gives a total of (3 x 3 x 2 x 2) = 36 possible sets of profiles. It is practically impossible to get accurate and reliable responses from respondents when opting for a full design of 36 profiles. To lessen the burden on respondents, a smaller but optimized set of profiles is used in an experimental design (Rao, 2014). In this study, we opted for a total of 12 profiles in the fractional factorial design (see Table 6). In addition, the thesis also adopted 'ranking' as the preference scale and Monotone Analysis of Variance (MONANOVA) estimation method to generate the part-worth utilities (risk). The MONANOVA was ideally chosen because it generates relatively better scores than other part-worth estimation methods (Orme, 2010). In respect of the attributes used and in **response to question 2** of the thesis, the basic conjoint analysis model is as defined in Eq. (5) below:

$$Y_{c=}\ \mu + \propto_{c1} (Financial\ \ Risk) + \propto_{c2} (Security\ Risk) + \propto_{c3} (Psychological\ Risk) + \propto_{c4} (Health\ Risk) + \varepsilon_c \quad (5)$$

where the aggregated $\propto'^{s}$, the part-worth utilities(aversion), become the weights of the attributes. This part of the study used XLSTAT software (Addinsoft, 2014) in generating and analyzing the results.

Table 5: A complete Set-up of attributes and their respective levels governing risk in online transactions of used goods.

Observation	**Financial Risk**	**Security Risk**	**Psychological Risk**	**Health Risk**	**Respondent 1**	**Respondent 329**
Profile1	Indifferent	Integrity	Appearance of goods	Contracting a disease(from previous owner	8	7
Profile2	Not concerned	Confidentiality	Appearance of goods	Not reusable (recyclable)	3	4
Profile3	Indifferent	Integrity	Information Asymmetry	Not reusable (recyclable)	6	1
Profile4	Not concerned	Confidentiality	Information Asymmetry	Contracting a disease(from previous owner	1	12
Profile5	Indifferent	Availability	Information Asymmetry	Not reusable (recyclable)	12	2
Profile6	Indifferent	Confidentiality	Appearance of goods	Contracting a disease(from previous owner	4	6
Profile7	Not concerned	Integrity	Information Asymmetry	Contracting a disease(from previous owner	7	8
Profile8	Highly concerned	Availability	Information Asymmetry	Contracting a disease(from previous owner	9	11
Profile9	Highly concerned	Confidentiality	Information Asymmetry	Not reusable (recyclable)	11	9
Profile10	Highly concerned	Availability	Appearance of goods	Contracting a disease(from previous owner	2	3
Profile11	Highly concerned	Integrity	Appearance of goods	Not reusable (recyclable)	5	10
Profile12	Not concerned	Availability	Appearance of goods	Not reusable (recyclable)	10	5

5.4.1 Mixed approached Explained

Both quantitative and qualitative research method was embarked upon for this work. However, the main part of the work was entirely quantitative in nature with a partial segment of the qualitative enquiry. Qualitative enquiry was made possible because of the technique applied for this study, notably conjoint design. Vivid explanation of the partial inclusion of qualitative enquiry governing the study is explained from (table 5). Yet, as earlier mentioned, the entire study was quantitative driven. This quantitative approach was selected with the reason that, it provides a visible insight into researching the exact subjects and a milieu for dealing with probabilities, generalization accompanied with valid explanations. As part of the technique implemented to deal with the problem and to accomplish the goals of the research. Survey questionnaires with closed ended questions were designed to explore the agenda of the dissertation. A step by step approach methodology is highlighted in (subsection 6.6) of the thesis.

Table 6: Background of experts

Selected (Used goods)	**(Clothes)**	**(Books)**	**(Antiques)**	**(Used cars)**	**(Electronic)**
Type of used goods (No visited)	3	3	1	4	2
Rank of Expert (Expert title)	General Manager Marketing Director Deputy Manager	Supervisor Director IT Manager	Supervisor	Mechanical Engineer Director of operations Marketing Manager Vice Manager	Director Marketing Direct.
No of years traded online	5-10	4-8	5-8	3-8	3-5
Year (expert) working In industry	(4,6,3,)	(4,5,6)	(6)	(3,8,2,3)	(3,4)

As evidenced from the table above, expert opinions were garnered from the dominated online used goods outlets in the Czech Republic; to aid in selecting the requisite attributes and their levels. This was made possible with the help of the inventory made with regards to *the name, type of used goods, websites, and the region* where this online outlet is situated in the Czech Republic. It must be stressed that experts in the executive position of these second-hand/ used goods outlets were people with high calibre of educational attainments ranging from Bachelors to PhD levels. Excerpts from the background of these interviewed rank and file of these companies avowed and combined in what literature and the theory postulated in the attributes enumerated for

the present study. Out of the number of used goods outlet visited to seek an expert opinion with pertinent risk attributes, it can be deduced from the table 4, that *used cars* outlets had the highest visits, followed by the *clothes* in an attempt to interview *mechanical engineer, Director of operation, marketing manager and vice manager* in each of the outlets visited. The clothes outlets were next to the used cars outlets in which *General manager, Marketing director, and Deputy Manager* were interviewed. The interview was done randomly in the Czech Republic with most of the regions hovering around Zlinsky, Hlavni Mesto Praha, Olomoucký, Plzeňský, Moravskoslezský regions. The experts had been in their positions ranging from (1-8) years and hence could be seen and describe as expert with experience for selecting attributes emanating from customers' point of view. Both outlet of antiques and Electronic recorded a very low visitation, but experts from that end to seek guidance in elicitation, had worked for more years given them a wider range of experience to help select risk attributes for the present study.

5.5 Sampling and Questionnaire Design

Irrespective of the nature of any research design, thus adhering to either qualitative or quantitative nature of the study, a requisite sampling technique is initiated for that research. (Bryman and Bell, 2007). Reflecting on the theme of this research, both probability (simple random technique) and partial non-probability sample technique (purposive technique) as supplement or elicit expert information from second hand vendors across the regions of Czech Republic were used. The questionnaire was designed in two forms with both English and Czech format. As with the scope of the study, the emphasis was basically placed on the Czech format. Hence, I gave the English version out to my Czech PhD colleague to transcribe the entire questionnaire to a very lucid and understandable Czech language for dissemination to respondents. However, after pre-testing the questionnaire using response from my master students in the Advanced Management and Marketing class, some errors were detected regarding the composition of the translation, questionnaire clarity, thus not easily understanding (because of some Czech Jargons and vocabulary used), since the technique adopted for this study needs to be visibly seen and answered without any form of questioning. In view of the initial set-back, the Czech translation was sent to an expert translation here in Zlin known as Zelenka Translation Company for efficient translation.

As a consequence, the full-fledged translation was prepared from an expert translation company. To ensure unnecessary ambiguity of the questionnaire after the expert translation, I pre tested with a different set of Czech students in my Management II class with 15 students who originally are Czechs by birth and Czech language is their

mother and native language. It was however, undeclared to them that they are answering pre-test questionnaires. This time the error rate was about 5.6%. Even with this meagre error rate detected from the pre-test, it was attributed to the scenario combinations (profile set) that was set to be ranked by respondents. This same error rate of (5.6%) was also attributed to the fact that some of the students selected for pre-test had to live for other seminar class leading to some uncompleted responses. The sample size typically adopted for most marketing research work goes with the average of 95% confidence level with the population within the realms of 10 million is ~ 500. However, as with the case of present study that applied the Traditional conjoint technique, it is recommended to used sample above 150 respondents for the hesitancy (aversion) modelling (Green and Srinivasan,1978; Ormes,1998; Orme, Alpert and Christensen, 1997). That notwithstanding, an appreciative or increment in sample size beyond the minimum baseline as suggested by pioneering scholars of the conjoint study therefore have a direct impact on the validity or generalisability of the results.

5.5.1 Data Collection

Originally, the questionnaire was prepared with google docs application software. Hence, the distribution of questions and later retrieved from respondents were then keyed into the software. Some of the respondents submitted their response via google doc application as stated. However, some selected students from the Tomas Bata University, Zlin, Czech Republic; mostly Bachelor students aided in disseminating the questionnaire to different regions in the Czech Republic. This was to ascertained a balance response rate devoid of bias as a representative of the entire population in the Czech Republic. A duration spanning 2 months were used in gathering data for the study (Between January –March 2018). Thanks to these Bachelor students who served as representatives in distributing the questionnaire. A grand total of 511 questionnaires was established as the sample size for the study and disbursed. However, a total of 342 questionnaires were received of hand to key-into or keypunched into the (google doc's application software) apart from the respondents who filled directly via their Facebook page and through emails. Out of the 342 questionnaires received of hand from these voluntary representatives, only 13 questionnaires were discarded and was not included in the key-in because respondents did not fill the questions in the right way. Some of them just filled some part and left the others unfilled, some respondents were also filling almost every section of the questionnaire. And so they were immediately shredded away without much delay. In all, 329 questionnaires were accurately filled and qualified for the analyses. A quick glance of the demographic details of the questionnaire will be discussed in detail in the subsequent chapter.

As with the techniques and the step by step implementation of the conjoint study primarily used in this study, coding of the response was automatically and indirectly done whiles respondents ranked their aversions in terms of the risk attribute inherent in them. This is where the conjoint analysis fulfils the validity concept of the research. Alternatively, given the descriptive assessment and analytic procedures governing the studies, other variables were coded before it was entered into the data analysis software.

5.5.2 Ethical issues/considerations

Ethical issues in research forms one of the basic necessities and fundamental platform of any scientific enquiry. In so far as ethics in its original concept is attributed to sound empirical research devoid of any harm; independence and bias or impartiality etc., to any participant that was involved in the research, ethical consideration in this research has been maintained. The term ethics is defined as a set of norms, values that guides the researcher in looking and regulating a scientific enquiry of a phenomenon. In this research, such ethical considerations were of no exception. I can clearly declare with all humility that respondents or participants were given ample time to partake in the research voluntarily without any form of influence or harsh. Confidentiality as one of the basic tenets of ethical issues was clearly stated in the survey generation to give participants full support without fear to disclose of any information. Thus, as a researcher, I made sure respondents or participant's human judgements are kept professionally without going publicly. As a researcher, I go by the quality and integrity in my research activities. In view of this, I can vouch that all the development of my study were from scholarly databases and empirical reports- notable among these scholarly databases includes Google search engine, Thompson Reuters database, SCOPUS, EBSCO, Pro-quest and other sources- which necessitated the fundamental factual art of arriving at the truth of the research. In that, I have tried to reference and acknowledged all information tapped from the affirmation databases or sources. In the event of omission or any typographical error, I earnestly seek your consent to find your heart to forgive me as it does not conform to my own ethical consent and the academic community. Alternatively, it must be put on record that I have tried to go with the principle of ethical consent in a more credible and honest manner to make this study shun away from unethical standard it deserves. In one way or the other, I might have repeated myself from an ideological concept in the text, however, it was so because of the challenging situations emanating from writing. As earlier stated, I have done my best and will not be far from instilling academic ethical consent to acknowledge a good research ethics.

5.5.3 Preliminary Information (descriptive data Assessment)

In relation to the conceptual framework of the thesis, (see Figure 5) preliminary data assessment was ascertained to respond to some key questions and objectives in the study. The data analyses begun with the basic descriptive analyses geared towards variable response of the accrued data. The exploratory factor analysis was first conducted to elicit the significance of each attribute vital for the implementation of further analyses. The Kaiser-Meyer–Olkin (KMO) measure of sampling Adequacy along with the Bartlett's Test of sphericity were employed in the test. This test is basically applied to examine the structure or relationship of variables and to evaluate the construct validity of the test yet to be carried out and finally track the multicollinearity of two or more variables within the data (Costello and Osborne, 2005). Subsequently, the Principal component (PCA) was used to examine the appropriateness of the data. It is recommended to use PCA in establishing first-hand solution in EFA in the absence of a model or priori theory (Pett et al, 2003). Just as in the case of this study PCA was adopted. For a clearer visibility, the scree plot assisted in examining the efficiency of the variances. From the foregoing, the Apriori Association rule mining approach was conducted to mine the relevant patterns embedded in the pool of dataset, specifically between the variables in the dataset. Detailed explanation of how the Apriori Association rule works is expounded in (subsection 6.23).

Again, to answer some key research questions and to fulfil some goals of the present study, the k means segmentation algorithm were used to select observations into a number of clusters (k) with the help of the nearest mean. This method works as an unsupervised learning approach and hence group observation into similar clusters in their respective interest areas. It assists in prediction and targeting, positioning for marketers. Detailed explanation of how segmentation analyses works can be seen (subsection 202).

Similarly, the Pearson Chi-square test or the Fisher's exact test with SPSS were used to determine the relationship of two categorical variables as can be seen from the conceptual framework of the thesis. Data was analyzed with the IBM SPSS. The rejection or otherwise of the hypothesis was determined by the criteria stated below.

Based on the number of observations (n) of 329 and a significance level (α) of 95% (0.05), if the test statistic (p) is less than the significance level (α), the null hypothesis (H0) is refused to be accepted while the alternative hypothesis (Ha) is accepted.

6. MAIN RESULTS AND DISCUSSIONS

The results, analysis and a thorough discussion of the analysis is presented in this chapter. The processes leading to the data analyses are detailed in the chapter.

6.1 Descriptive summary and socio demographic profiles of respondents

Detailed output of the questions elicited from respondents seen in Table 8 Indicates that out of the 329 responses accurately received for evaluation, Male respondents recorded 55 percent (55%) ahead of their Female counterparts with 45 percent (45%). It can also be seen that majority of the respondents were captured in the Zlinsky Region with 40 percent (40.4%), followed by respondents in Jihomoravsky region 7.0 percent (7. 0%).There is a clear indication of most of the respondents emanating from the Zlinsky region with the simple reason that the researcher is basically situated in that region. It can also be seen that respondents with bachelor's level of education patronized in the research with 47 percent (47.7%) with High school levels graduate following suite on 39.5 percent (39.5%) response rate. Moreover, a sizable number of the respondents had shopped online and purchased used good online before with 92.7 percent (92.7%) and 49.2 percent (49.2%) respectively. Quite surprisingly, 49.2% of the respondents' had the feeling of some risk that might likely avert them from initiating online transactions most specifically used goods. On the bases of the two hypothesis tested, it was deemed necessary to present the phi and Crammer's test as a yardstick of signifying the strength of the association between the tendency of respondents to shop or otherwise for online used/second-hand goods, in rebuttal of some objectives of the dissertation. Quite in part, most of the respondents were personal users engaging on online transactions representing 90.6 percent (96.6%) of the entire respondents. Table 7 below presents the summary descriptive statistics of respondents.

Table 7: Demographic profile of respondents

Demographic profile of respondents	Frequency (N)	Percentage (%)
Gender		
Male	181	55.0
Female	148	45.0
Age (yrs.)		
18-25	232	70.5
26-35	52	15.8
36-45	24	7.3
46+	21	6.4
Highest Educational Level		
High School	130	39.5
Bachelor's degree	334	47.7
Master's degree	39	11.9
Doctoral degree	3	0.90
Type of online customer		
Business person	23	7.0
Personal user	298	90.6
Other	0	0
Respondents located in the Czech Republic (Regions)		
Hlavni Mesto Praha	13	4.0
Jihocesky Region	13	4.0
Stredocesky Region	20	6.1
Karlovasrky Region	16	4.9
Ustecky Region	11	3.3
Liberecky Region	14	4.3
Kralovehradecky Region	11	3.3
Pardubicky Region	14	4.3
Vysocina Region	18	5.5
Jihomoravsky Region	23	7.0
Olomoucký Region	17	5.2
Zlinsky Region	133	40.4
Moravskoslezský Region	14	4.3
Plzeňský Region	12	3.6
Shopped Online		
No	24	7.3
Yes	305	92.7
Purchased used good online before?		
No	87	26.4
Yes	242	73.6
Do you consider Risk factors?		
No	91	27.7
Yes	162	49.2

6.2 Conjoint Analyses Results

One of the fundamental and distinctive features of the conjoint analyses used in this dissertation is its ability to indirectly unravel user utility or preference (herein referred as aversion) into utility scores. This so-called utility scores (part worth utility) are then summed up to denote the relative importance (weight of risk) as exemplified in sub section 5.3 given the selected factors or attributes and their corresponding levels. The evaluation method adhered for this study was Monotonic Analysis of variance (Mononova) as earlier stipulated, this was specifically chosen for the evaluation of part worth utility because of its ability and the tendency to generate a better part-worth utility scores as opposed to the other methods (Ormes, 2010). I must emphasize that the part- worth utility and its relative importance (herein referred to as aversion) in this study provides the value proposition of customers' in respect of the magnitude of risk coupled with the importance of such risk to the customer in question. This is carried out in a trade of environment of online used goods transactions in the Czech Republic. This can be seen from the table 8 below:

Table 8. Part-worth utilities (Risk) and relative importance (Risk) of Attributes

Attribute (criteria)	**Levels**	**Part-worth utilities**	**Std. deviation**	**Relative importance (Risk %)**
A_1: **Financial Risk**	A_{11}: Not concerned A_{12}: Indifferent A_{13}: Highly concerned	**0.6908** 0.2555 -0.9463	1.6772 1.2555 2.1620	31.39[2nd]
A_2: **Security Risk**	A_{21}: Confidentiality A_{22}: Integrity A_{23}: Availability	-0.3722 **0.3461** 0.0261	1.3407 1.3502 1.1042	17.10[3rd]
A_3**Psychological Risk**	A_{31}: Information Asymmetry A_{32}: Appearance of goods	-0.4430 **0.4430**	1.0434 1.0434	11.80[4th]
A_4: **Health Risk**	A_{41}: Not reusable (recyclable) A_{42}: Contracting a disease(from previous owner)	**1.6577** -1.6577	1.5856 1.5856	39.71[1st]

R^2 = 0.9743.

In **response to Objective 3** of the study, the results show that (results labeled in the last column of table 8), *Health Risk* (39.71%) as one of the basic tenets of risk aversion in online transactions of used goods, adjudged the most riskier attribute considered by customers. This is seconded by *Financial risk* (31.39%), and Security risk attribute (17.10 %). However, the *Psychological risk* attribute recorded the least most riskier

attribute by respondents in the Czech Republic with (11. 80%). Again, reflecting on the **response of the objective 3** of the dissertation, subsequent part-worth utilities of the risk aversion of customers to hook up via online in search of used goods are displayed in the same Table 8. This part-worth utilities are further elaborated given the levels of each attribute selected for the study. It is interesting to note that, a positive part-worth utility of risk has a direct opposite to the higher risky situation that prevents the customer from connecting on online for used good whiles a negative part-worth symbolizes the lower negative risky level or situation regarding the zeal to connect via online in search of used good. (also labeled in the 3 column of table 8). For instance, given Financial attribute with levels such as *Not concerned, Indifferent, highly concerned.* This is an indication that respondents are not actually concerned whether their money will be locked up in a bid to hook up online for used goods with a positive par-worth utility (0.6908) as against the negative part-worth of (-0.9463) of respondents; with the view on highly concerned that their money will be locked up in attempt to get online for used goods. This means that, respondents are of the view that their money could be locked up in the gist to transact on online, yet it is not a matter of high or yardstick of not hooking up via online. In terms of security risky reasons or attribute, respondents value their *integrity* (0.3461) and thus avert them from such online transactions as compared to *confidentiality* (-0.3722). In the same vein, Psychologically, respondents are mindful of the *appearance of the good* (0.4430) in question and hence tends to avert them from connecting via online as opposed to the *information Asymmetry* recording (-0.4430). Given the healthy assumptions from respondents, it can be deduced that respondents are very cognizance of the hazards used goods pose in their environment and hence that situation results or avert them from embarking on online in search of used goods. This makes sense, in many circumstances where some used goods are thought of to have a shorter spun and even tends not be recyclable. Hence, respondents shed a partial risk of (1.6577) with a negative part-worth risky situation in the event of contracting a disease (-1.6577).

It can be generally attested that respondents in the Czech Republic seeking not to connect via online in search of used/second-hands goods considering the aforementioned characteristics is basically attributed to the following: In terms of *Financial risk* (A_1) respondents are *Not concerned,* Security wise (A_2) respondents seek for their *integrity*, psychologically (A_3), respondents are keen on the *Appearance of the used good while in Healthy* (A_4) situations respondents are much particular about *the recyclable nature of the used good* in question. It must be worthy of note to second hand vendors that, respondents' aversion is stemmed from the preceding variables enumerated and tested. It can be seen from Table 8 that, there was a higher internal consistency in respondents' aversion to connecting via online in search of used goods

representing an R-squared of (0.9743). Again, the standard deviation values (seen from Table 8 on the 4 column) gives credence to the reliability of the relative importance of (sample mean) in line with the risky components stimulated from respondents'; as a precondition or yardstick or in reflexive of the actual mean from the population of the present study

Table 9: Average relative importance (risk) in online used goods transactions based on demographic profiles

Demographic profile of respondents	Financial risk	Security risk	Psychological Risk	Health Risk
Gender				
Male	29.7	29.5	22.1	18.7
Female	28.9	28.7	22.6	19.8
Age (yrs.)				
18-25	31.1	30.8	21.3	16.9
26-35	26.4	26.3	24.2	23.2
36-45	25.6	25.6	24.6	24.2
46+	25.6	25.5	24.5	24.3
Highest Educational Level				
High School	28.4	28.2	22.9	20.5
Bachelor's degree	29.8	29.6	23.2	20.2
Master's degree	26.0	25.9	24.3	23.6
Doctoral degree	25.1	25.1	25.0	24.9
Type of online customer				
Business person	25.7	25.6	24.7	24.2
Personal user	32.8	32.5	20.2	14.6
Other	0	0	0	0
Respondents located in the Czech Republic(Regions)				
Hlavni Mesto Praha	25.3	25.3	24.8	24.5
Jihocesky Region	25.3	25.3	24.8	24.5
Stredocesky Region	25.5	25.5	24.7	24.3
Karlovasrky Region	25.4	25.4	24.7	24.4
Ustecky Region	25.3	25.2	24.9	24.6
Liberecky Region	25.4	25.3	24.7	24.5
Kralovehradecky	25.3	25.2	24.9	24.6
Pardubicky Region	25.4	25.3	24.7	24.5
Vysocina Region	25.5	25.4	24.7	24.4
Jihomoravsky	25.7	25.6	24.7	24.2
Olomoucký Region	25.4	25.4	24.7	24.4
Zlinsky Region	28.5	28.3	22.9	20.4
Moravskoslezský	25.4	25.3	24.7	24.5
Plzeňský Region	25.3	25.2	24.8	24.6
Shopped Online				
No	25.6	25.6	24.6	24.2
Yes	32.9	32.6	20.1	14.3
Purchased used good online before?				
No	27.3	27.0	23.5	22.0
Yes	31.3	31.0	21.1	16.5
Do you consider Risk factors?				
No	27.4	27.3	23.5	21.8
Yes	29.2	29.0	22.4	19.3

As seen from Table 9 and in **response to Objective 5**, the study segmented and elicited the (utility scores of risk) to exhibit how respondents' demographic profiles affected the demographic group in relation to the aversion (utilities) assigned to each of the risk factors. A quick glance of the Table 9 indicates that, even though health risk was seen as the riskiest scenario averting the respondents from connecting via online in pursuit of used goods, most of the demographics perceive financial risk as relatively riskier. For instance, at the gender level, male respondents viewed financial risk (29.7%) as against the overall adjudge health risk level of (18. 7%). Alternatively, some demographics like the age group (36-45) of respondents regarded both financial and security risk situations as relative important (weight of risk) compared to other risk attributes. Among the educational levels, it can be seen that almost all the levels had financial risk as the main impediment preventing them from embarking on online transactions specifically used goods. It is quite surprising to note from the table that, at the regional level, in spite of the overall level, relative risk factor coming from healthy situations, yet financial risk tends to be a major factor that avert the respondents from online transactions of used goods. This can be attributed to the fact that Czechs are very resolute and circumspect when it comes to losing money via online. This scenario is consistent with the words of Pavel Jakub, the Chief Executive officer of Equa Bank in his speech on used goods online. Therefore, as a call to policy makers and the second hand vendors in the Czech Republic, they should endeavor to encrypt their payment mode transactions as it is one of the setback inhibited in the respondents' not to engage in online transaction. Extant literature has shed more light on website quality as a deterrent episode from online customers; not connecting anyhow to do online transaction. This results however, has reiterated the zeal for online vendors and to be precise second vendors to ensure a safety but quality website that will avert or prevent customers from connecting via online, since the internet is not leaving anytime soon. A thorough discussions concerning each of the results of attributes that might avert or hinder respondents' in the Czech Republic in hooking up via online for used/second hand goods are expounded in the subsequent pages:

I. *Financial Risk*

This attribute adjudged as the second most riskier scenario that tends to propel the respondents from connecting on online specifically for used goods. However, given the positive part-worth utility of this risk as seen on Table 6 to be *Not concerned* for some respondents, it does not take away the fact that financial losses still remain to be a hindrance for respondents. But the evidence can be deduced from the demographic profile in line with each of the risk attributes also attested to that (see Table 7). In the light of this situation, Czechs are by far plunged and conscious of financial loss in a bid to hook up via online. As earlier envisaged in the previous chapters, this sound as

vital information for these vendors to make available financial flexibility to the admiration of customers to prevent any financial havoc to customers. This situation has been seconded by the earlier works of (see Jacob and Kapla,1972; Kim, Ferrin and Rao, 2008; Lawrence, Junnarkar, Sachs and Co, 2002). Even though their works were not specifically on used goods online, it still behooves an act of proper financial management to curtail the presence of fear and panic in the customers' zeal to connect via online. This results, however, becomes a wakeup call on all second- hand vendors in a bit to connect through online platforms for business in the Czech Republic or elsewhere in the world.

II. *Security Risk*

This attribute was given a relative importance as the third scenario, so far as risk to avert the customer from embarking on online transactions specifically used goods is concerned. This somewhat mirrors the general perception of Czechs been touted as conservatives. The act of cybercrime and other online frauds might be accountable for Czechs seeing online transactions as a hindrance to their security, where some respondents' counted their level of integrity as partially averting them to do so. Again, it can be seen from Table 9, that security and financial risk were highly detected as mostly averting respondents in connecting via online. Customers in the Czech Republic by this results explicating that they prefer to walk the usual way of brick and mortar style to prevent any security challenges in the future. This view contradicts the works of Pilik, Jurickova and Kwarteng, (2017) reporting that because of the advent of the internet, Czechs are seen as one of the countries connecting via online for transaction rampantly. However, with the attachment of used goods, it can thus be disputed that second hand /used goods thus becomes the 'poison' of customers' resistance to connect via online. Through the results of this present study vendors of the second hand industries in the Czech Republic should take cue of proper security checks on their websites to enhance the industry progressiveness.

III. *Psychological Risk*

This attribute was the least risky scenario among respondents in the trade-off setting. This, however, debunks the general view that this factor is not as much as necessary factor that propels the customer for connecting online in search of used goods. But with a general and consensus definition of used goods, it cannot be gainsaid that the used good in question psychologically might not be in the best position as it was originally purchased or before trading it on online platform. But in the event of exposing such used goods online for sales, the appearance does and sometimes change. This, technically the customer has no control over it, so this tends to avert the customer

from engaging in such transactions. In so far as, delivery problem tends to give psychological trauma to the customer in general in terms of online transaction, compared to walking in to the shop for the feel of the goods. Second-hand goods do exacerbate this trauma in tandem with the output of the results generated. Vendors must therefore put a clause that mandates the customer to return such goods without any outrageous charges or fee.

IV. *Health Risk*

Bad or unhealthy circumstance is one of the basic components of life that each and every individual hope to prevent. A litany of such situations are connected to our environments through second-hand goods that have a shorter life spun. Again, and especially used clothes tacitly worn by second owner is touted as providing health implications to the final consumer, like infectious diseases, dermatological diseases and so forth. In spite of the rigorous detergents specifically used on used clothes before putting them for sales, consumers in the Czech Republic still find healthy risky situations as the utmost scenario of attribute or factor that demotivate them to hook up online for such goods, most importantly when such used goods cannot be recyclable and hence tends to cause havoc to the environment thereby causing pollution and so forth. This results thus become steady with the works of Chipambwa, Sithole and Chisosa, (2016) that states that there is some perceived risky health related in undergarments of most of the used goods traded in open bazaars.

6.3 Data Analytics (Descriptive Data Assessments)

As Part of the theme and the conceptual framework of the thesis (see Figure 3), This section presents results of analysis used to develop and evaluate variables that are adopted in exploring pre-purchasing risk factors in online transactions of used/second hand goods in the Czech Republic. Prior to evaluating the descriptive segment of the thesis; with respect to the risk aversion of online customers towards used goods online as earlier stipulated, exploratory factor analysis was adapted to produce factor variables pertinent for exploration and basically embarked upon to reduce the large number of variables to a more accurate but optimized number for the prevention of redundancy. It must be noted that, the exploratory factor analyses enhanced accurate number of variables that assisted in other analysis like the cluster analysis, association rule generation analysis. Again, this sections presents the evaluation of hypothesis in line with the objective of the dissertation.

Exploratory factor Analyses

Exploratory factor Analysis (EFA) is characterized with the following goals (1) reduction of variables (2) Scrutinizing the association between variables under study (3) Assessing the unidimensionality of the construct under study (4) Weighing construct validity (5) Addressing multicollinearity of variables for further analysis among others (Bret Williams et al, 2010). In respect of this dissertation, EFA is proposed to augment further analyses as per the central or the conceptual framework of the study (see Figure 5). Hence, this dissertation employed EFA to prune and analyze variables with strong correlations, eigenvalues associated with attributes or loadings for the subsequent analyses, notably cluster analyses and association rule analyses. To do this, the Principal component analysis (PCA) is primarily used by analyst to lessen data to desirable dimensions with the aid of variance implanted in the patent variables. As a matter of fact, the rule of thumb for EFA signifying the suitability of variables that will be used for further analyses met the threshold, given the criterion adopted by social scientist. For instance, variables of the correlation matrix must exceed 0.30, a Kaiser-Meyer-Olkin (KMO) measure of 0.6 or more, a Bartlett test of spherity $P<0.50$ with no multicollinearity of variables under study reflects on the baseline for further analyses. The aforementioned thresholds must be accomplished before attribute generation with further analyses following suite as earlier mentioned.

In the light of this study, the correlation of variables resulted in values exceeding the baseline of 0.30 (available on request), with no multicollinearity present. Table 10 presents both KMO and Bartlett's Test.

Table 10: KMO and Bartlett's Test (Source: Author)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.680
Bartlett's Test of Sphericity	Approx. Chi-Square	2239.752
	df	136
	Sig.	.000

As can be seen from Table 10, a KMO measure resulted as 0.680 exceeding the baseline of 0.60, this vividly shows the suitability of the data for further analyses. Again, the Bartlett's test of spherity recorded significant level at $P<0.50$. (see Table 10). Given the adequate threshold subjected to the criteria met before attribute generation seen above, factor or attribute extraction was subsequently initiated.

Table 11: Communalities **(source: Author)**

	Initial	Extraction
Gender	1.000	.540
Age	1.000	.793
Highest Educational	1.000	.816
Region	1.000	.771
shop online	1.000	.644
Type of online customer	1.000	.609
Purchase second hand goods online	1.000	.901
Do you consider Risk factors	1.000	.884
Risk factor mostly affecting attempt to purchase second goods	1.000	.832
risk factors consider	1.000	.800
why don't you purchase second hand goods online	1.000	.692
Risk factors influence decision to purchase second hand goods online	1.000	.721
Risk factors influence type of second goods to purchase	1.000	.731
Risk factors ready to trade off	1.000	.513
Affected by any of the risk factors	1.000	.776
Type of second hand goods purchased	1.000	.805
Remedies	1.000	.415

Extraction Method: Principal Component Analysis.

Reflecting on one of the fundamental principles of EFA and for the sake of further analyses in this study, the PCA embarked on varimax orthogonal rotation technique to test dimensionality of other constructs used for analyzing the pre-purchasing risk factors in online used goods transactions. The attributes for such further analyses were generated on the grounds of eigenvalues been greater than 1. As evidenced from Table 11, all communalities exhibited values exceeding 0.5 with the exception of *remedies* value which violated the rule of thumb of 0.5. It must be noted that, even though such variable did not meet the criteria, the analyzes still holds since that construct will be pointedly being affected. In sum, the communalities coupled with other attributes affirms the consistency and unidimensionality of the variables under study; signifying the core mandate of the EFA.

Table 12: Total Variance Explained **(Source: Author)**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Gender	3.747	22.044	22.044	3.747	22.044	22.044
Age	2.105	12.382	34.426	2.105	12.382	34.426
Highest Educational	1.611	9.476	43.902	1.611	9.476	43.902
Region	1.588	9.341	53.243	1.588	9.341	53.243
shop online	1.345	7.910	61.153	1.345	7.910	61.153
Type of online customer	1.148	6.750	67.903	1.148	6.750	67.903
Purchase second hand goods online	.938	5.518	73.421			
Do you consider Risk factors	.904	5.316	78.737			
Risk factor mostly affecting attempt to purchase	.777	4.568	83.305			
risk factors consider	.703	4.138	87.443			
why don't you purchase second hand goods	.546	3.209	90.652			
Risk factors influence decision to purchase	.431	2.537	93.189			
Risk factors influence type of second goods	.363	2.133	95.322			
Risk factors ready to trade off	.317	1.868	97.190			
Affected by any of the risk factors	.259	1.523	98.713			
Type of second hand goods purchase	.168	.988	99.701			
Remedies	.051	.299	100.000			

Extraction Method: Principal Component Analysis.

Again as seen from Table 12, the total variance explained relayed six (6) components exceeding the threshold of eigenvalues criteria of 1.00. The attributes or components shown in the initial eigenvalue computation stimulated a cumulative percentage of (67. 903%).The eigenvalues on the other hand are graphically shown on the scree plot in Figure 6 below:

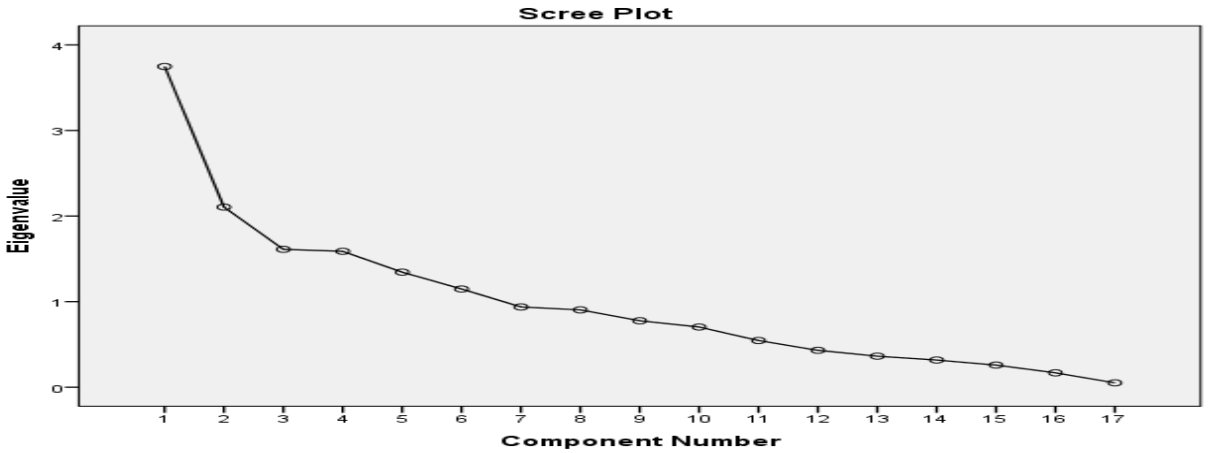

Figure 6: Scree plot

The scree plot shows criteria of eigenvalues greater than 1, representing the optimal values associated with the initial eigenvalues of six (6). However, this can be argued from the perspective of the researcher, since interpreting scree plot is subjective and thus requires the researchers own judgement (Gourch, Tabachnick and Fidel, 2010)

Table 13: Rotated Component Matrix **(Source: Author)**

	Component					
	1	2	3	4	5	6
Gender						.482
Age				.873		
Highest Educational				.895		
Region					-.559	
shop online						.733
Type of online customer						.754
Purchase second hand goods online	.937					
Do you consider Risk factors	.930					
Risk factor mostly affecting attempt to purchase	.897					
risk factors consider	.878					
why don't you purchase second hand goods					.687	
Risk factors influence decision to purchase			.845			
Risk factors influence type of second goods			.846			
Risk factors ready to trade off					.622	
Affected by any of the risk factors		.853				
Type of second hand goods purchased		.835				
Remedies		.445			-.451	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The PCA method along with varimax Kaiser Normalization clearly indicated vibrant correlation coefficients amongst variables and attributes. By standard, the attribute loadings should exceed 0.4. In component 1,2,3,4 almost all the variables attained the mark exceeding the standard score of 0.4. Other scores can be seen from the table 13, it must be noted that all the variables with the exception of regions and remedies are fit for further analyses.

6.4 Hypothesis testing

In line with the conceptual Framework of the thesis (see section 5.0) and **in response to objective 4** of the thesis posed in the thesis, two hypotheses were tested. The Pearson chi-square test was initiated to evaluate the hypothesis with the aforementioned criteria seen in (subsection 7.1).

Hypothesis 1

The ideal hypothetical test was to estimate whether there is a relationship between risk factors and the tendencies to purchase used or second hand good online. The null and alternative hypothesis are stated as:

H0: There is no relationship between risk factors and the tendencies to purchase used or second hand goods online
H1: There is a relationship between risk factors and the tendencies to purchase used or second hand good online

Test results in Table 15 shows that the asymptotic significance value (P value), .670, of the Pearson chi-square (since it satisfies criteria 3 in subsection 4.3.2) is greater than the significance level ($\alpha = 0.05$). The null hypothesis is refused to be rejected, hence I can conclude that the risk factors does not determine the tendencies or the penchant of the customer to hook up via online for the purchase of used goods.

Table 15: Association between purchase of goods online and risk factors (Source Author)

		Do you consider Risk factors			
		Yes	No	NA	Total
Purchase second hand goods online	Yes	157	84	0	241
	No	8	3	77	88
Total		165	87	77	325

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	289.535[a]	2	.670
Likelihood Ratio	307.877	2	.310
N of Valid Cases	329		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.90.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.944	.000
	Cramer's V	.944	.000
N of Valid Cases		329	

Hypothesis 2

The second hypothesis aimed at evaluating whether risk factors associated with online transactions have a negative impact on the type of second hand goods purchased. Based on the designed null and alternative hypothesis below, the test results in Table 16 are evaluated.

H_0: *There is no association between risk factors and the type of second goods purchased online*

H_1: *There is an association between risk factors and the type of second goods purchased online*

Table 16: Relationship between risk factors and type of goods purchased (Source: Author)

		Risk factors influence type of second goods to purchase		
		Yes	No	Total
Purchase second hand goods online	Yes	155	87	242
	No	64	23	87
Total		219	110	329

chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)

Pearson Chi-Square	2.602[a]	1	.107		
Continuity Correction[b]	2.193	1	.139		
Likelihood Ratio	2.673	1	.102		
Fisher's Exact Test				.114	.068
N of Valid Cases	329				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 29.09.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.784	.000
	Cramer's V	.554	.000
N of Valid Cases		329	

With all frequencies less than 5, the Pearson chi-square was used to evaluate the hypothesis. The P-value of Chi-square (0. 107) is more than the significance level, α. The null hypothesis is therefore accepted. The conclusion garnered from the data is that, the zeal to purchase used goods online is associated with some risk factors. This conclusion is in line with initial findings in the summary and demographic profiles of respondents' view on risk factors in online transactions (seen under section 5.2.1).

6.5 Cluster Analysis

In line with the conceptual framework seen under (subsection 5.0) and the data analytics perspective of the dissertation. Non-hierarchical cluster analysis was employed to assess the descriptive phenomenon of the data concerning the pre-purchasing risk factors in online used goods transactions as earlier stipulated. Given the application of cluster analyses in (sub section 2.3) and its accompanying equations in the same section 2.3. The K means was selected for the analyses. This is because the K means works as an unsupervised learning approach that provides a vivid and clear meaning to each of the clusters mostly generated (Kwarteng et al, 2017). The K chosen for the analyses was (4). This means that automatically there will be 4 groups of clusters to naturally analyze and cluster respondents' pre -purchase hesitant in online transactions along with some pertinent demographic variables. The variables relating to the pre-purchase hesitancy for the clusters was first pruned and reduced with the exploratory factors analyses (EFA) and also supported with the validity content using the Davies Bouldin index. The validity was thus supported by the Davies Bouldin: 0.676 which signifies the potency of the clusters generated.

The variables under investigations pertaining to the pre-purchasing risk factors in online used goods transactions as earlier specified were: *Do you consider risk factors in online transactions of used goods, Regions located in the Czech Republic, purchased second hand goods online before, Risk factor mostly affecting attempt to purchase second goods, Type of online customer, shopped online, Highest Educational* coupled with *age* groups and *gender* of the respondents. The cluster (k) prototypes for the 4 clusters are presented in table 17.

Clusters	0	1	2	3
*No of items (*pre-purchasing risk factors in online used goods transactions*)*	37	74	170	48

The table above shows the clear number of observations (items) attributed to each cluster in observations of respondents who rooted for the pre-purchasing risk factors in online used goods transactions. Out of 329 observations, Cluster 2 recorded the highest number of observations with 178 objects, followed by cluster 1 with 74, again cluster 3 also recorded an observation of 48 with cluster 0 also following suite with the smallest observation with 37.

The centroid table below presents the clusters in their respective variables. It must be emphasized that the analysis of our k means results are done by rounding the (means) to the nearest whole number to match with the coding system before generating my results from the statistical tool. As evidenced from the table below and for easy interpretation, the variables generated from the software are automatically calculated by the authors in line with the coding done before running. The coding response to our evaluation was done as follows: All attributes were coded as with the exception of demographic attributes as ***1=Yes, 2=No; Male =1, Female= 2; Age category follows as 18-25=1, 26-35=2 ,36-45=3, 46+=4; Regions, Pardubicky Region=9, Zlinsky Region=13, Hlavni Mesto Praha=1, Stredocesky Region=2, Olomoucký Region=12, Vysocina Region=10, Moravskoslezský Region=14, Jihomoravsky Region=11, Plzeňský Region=4, Jihocesky Region=3, Ustecky Region=6, Karlovasrky Region=5, Kralovehradecky Region=8, Liberecky Region=7***, This coding figures are attached to the generated figures in the table below: As indicated in Table 6 in the prototype, the chosen *k* was four (4). In mounting and generating clusters for analysis, a cluster model was designed with RapidMiner studio 7.3 as presented in Figure 7 below. The model produced four clusters by doing a comparison of attribute values with means of observations of other attributes.

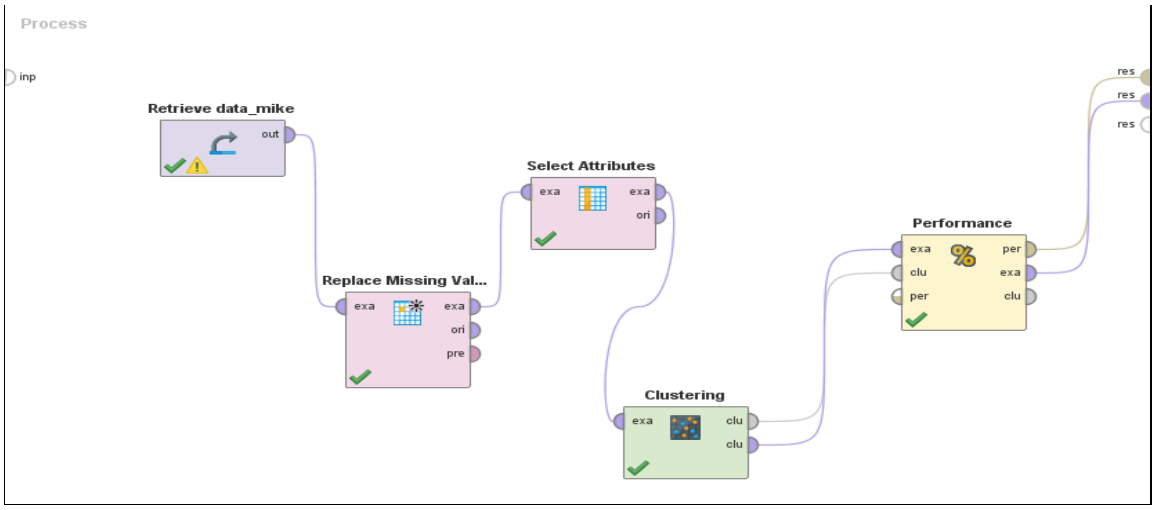

Figure 7: Cluster analysis model
(Source: Author)

As can be evident from the cluster model above (figure 6), data was saved in excel CSV file. Subsequently, data cleaning was initiated with replaced ones, thus replacing missing values. In the meantime, attributes selected for the clustering was placed into corpus with the data reduction aided by virtue of Exploratory factor analyses as earlier on stipulated. K means clustering was then performed to elicit the interesting clusters for interpretations. Vector performance of the clusters generated in line with the centroid table are presented below for further deliberations in each of the clusters. The centroid table exhibiting the Euclidean distance of each clusters accompanied with its means are reported in the centroid table.

Table 17: Centroid Table (Source: Author)

Attribute	Cluster 0	Cluster 1	Cluster 2	Cluster 3
Age	1.8(2)	1.5(2)	1.4(1)	1.5(2)
Do you consider Risk factors	0.9(1)	1.4(1)	0.3(1)	0.6(1)
Gender	1.5(2)	1.5(2)	1.6(2)	1.5(2)
Highest Educational	2.0(2)	1.7(2)	1.7(2)	1.7(2)
Purchase second hand goods online	1.8(2)	1.0(1)	1.1(1)	1.9(2)
Region	8.9(9)	7.7(8)	10.4(10)	10.4(10)
Risk factor mostly affecting attempt to purchase second goods	3.0(3)	3.0(3)	2.1(2)	2.3(2)
Type of online customer	1.5(2)	1.3(1)	2.0(2)	1.9(2)
shopped online	1.3(1)	1.0(1)	1.0(1)	1.2(1)

With regards to the central theme of the dissertation and in response to **the objective 4 of the thesis**, geared towards pre-purchasing risk factors associated with the desire of Czech citizenry to embark on online transactions on second-hands goods. Both clusters (0) and (3) presents similar worthy consideration given the results of the centroid table above, Females within the age bracket of (26-35) having a bachelor's degree in Education tend to consider risk factors in an attempt to

initiate a transaction of used goods online, specifically in the Pardubicky regions and Vysocina regions respectively of the Czech Republic. In all these developments, both in clusters (0) and (3) in spite of all these risk aversions, customers have not made any attempt to hook up via online to make purchase of second hand products, however, in the event of deciding to hook up on online for such transactions, whiles psychological *risk* does become the main brain affecting these customers in the Pardubicky regions; alternatively, Financial risk tends to avert customers located in the Vysocina regions. The scenario of psychological risk preventing customers to embark on online transaction has been highlighted by other scholars. Second-hand vendors by this stream of information should endeavor to provide a comprehensive delivery channel on their websites so as to eradicate any fear or panic from customers. Reflecting on the works of Kim and Lee (2006) that provides vivid information about website quality, it cannot be undermined that Czechs in their own conservatism and psychological thought as exhibited in the first Cluster (0) will have a doubt about such websites and most specifically when the goods to be purchased is even a second hand one. This conclusion is seconded by the initial findings of the conjoint results.

In cluster (1), as seen from the centroid table above, presents quite similar but interesting cluster considering the demographic variables within each of the clusters generated, thus with all the clusters reporting only females coupled with the same Bachelors educational levels in the pre-purchasing aversion scenarios in all the clusters. However, customers within that cluster (1) is quite different with reason that customers in that sphere has ever hooked up via online to purchase once or a second hand goods before. By hindsight, this cluster is characterized with most of the respondents coming from *Kralovehradecky Region* in the Czech Republic whiles this region unanimously also see Psychological risk as the pre-dominated factor dissuading them from not connecting via online purposely for used goods. In rebuttal of the trade-off analyses from the conjoint results in the previous chapters where Psychological scenarios were seen as the less relative importance of risk to the respondents. This time within the premises of the *Kralovehradecky Region* customers are keen on this attribute as opposed to other ones, second-hand vendors should endeavor to strengthen their delivery channel to prevent any trauma.

Alternatively, cluster (2) presented different but similar scenarios from the previous clusters. However, within the context of regions and the pertinent risk factor averting such cluster from online transaction of used goods stands out opposite from the previous scenarios as already mentioned. Security issues tends to avert the respondents from Vysocina regions from hooking up via online. This

is fed into the general behavior of all online customers regarding security scenarios in online transactions as a whole. It cannot be disputed that each and every online customer is weary of security reasons. The general conundrum here is that, customers are more attached with the end situations of cybercrimes, frauds etc., of which Czechs are of no exception to this thought especially where Czechs are touted as conservatives and to be precise a region like Vysocina. For second-hand vendors in the Czech Republic to succeed on online platforms sales, this finding emanating from the results of the cluster analysis, it expedient for them to embark on rigorous and proper security on their websites to instill hope in their customers should they connect via online in search of any used goods of their choice.

Finally, to characterize the resulting clusters as seen in figure 8 it can be deduced that cluster (3) has the highest average distance to pre-purchasing risk factors in online transactions in terms of each of the regions in the respective clusters. However, cluster (0) has the lowest-within cluster average distance. This can be seen from the light of cluster (0) being homogeneous from other generated clusters.

Figure 8: Cluster chart
Source: Author

6.6 Association Rule Analyses

Association rules mining naturally lends itself to many rules depending on the number of transactions in the database and the threshold set on some variable measures. However, to ensure the selection of interesting, potent and redoubtable rules from a set of all possible rules, certain constraints are often used as measures of significance. Largely, two of the best-known of these constraints are support and confidence, where minimum thresholds are set on their resulting values. The support is a fraction of transactions that contain both the antecedent and the consequent whereas confidence measures how often items in the consequent appear in transactions that contain the

antecedent. It must be noted that when associations between three or more attributes are found, for example, Cheese, bread, → diaper, the confidence percentages are computed based on the two attributes being found in the third. Other metrics such as Lift, Laplace, Gain etc. are additional indicators that demonstrate the strength of the rules' relationships (Shmueli, Patel and Bruce, 2010). According to basic principles underlying the validity, accuracy, completeness as well as the reliability of the Association rule mining technique, the technique is vouched or guaranteed with the magnitude (percentages) of the aforementioned metrics; thus, confidence, support, lift of the rules (Chena, Fenga, and Luo, 2016). The table 18 and 19, below present some key findings of association rules of the data set governing pre-purchasing risk factors in online used goods transactions.

Table 18: Binary attributes of the data set towards risk factors influencing customer decision:(Source: Author)

Rules	Antecedent (X)	Consequent (Y)	Support %	Confidence %	Lift%
#1	{Type. Of. online. Customer=Personal user, second. hand. goods. Online. =No, Influence.the.type.of. second. Goods=Yes, Any.of.the.risk. factors. =Yes}	{Do. risk. factors. Influence=Yes}	7.9	100	1.39
#2	{shop. Online. =Yes, second. hand. goods. Online. =No, Any.of.the.risk.factors.=Yes}		7.6	96	1.33
#3	{Type. Of. online. Customer=Personal user, second. hand. goods. Online. =No, Influence.the.type.of.second.goods=Yes}		7.2	97	1.33
#4	{shop. Online. =Yes, second. hand. goods. Online. =No, Influence.the. Type.of.second.goods=Yes		7.5	95	1.37
#5	{Gender=Male, Type. Of. online. Customer=Personal user, second. Hand. Goods. online. =No, Influence.the. Type.of.second.goods=Yes}		7.5	100	1.39
#6	{Gender=Male, shop. Online. =Yes, second. hand. goods. Online. =No Influence.the. Type.of.second.goods=Yes}		7.6	96	1.34
#7	{Gender=Female, shop. Online. =Yes, Type. Of. online. Customer=Personal user, second. Hand. Goods. online. =No, Influence.the. Type.of.second.goods=Yes}		7.4	96	1.33
#8	{shop. Online. =Yes, Type. Of. online. Customer=Personal user, second. hand. goods. Online. =No, influence. The. type. Of. second. Goods=Yes Any.of.the.risk.factors.=Yes}		7.2	96	1.32

Table 19: Binary attributes of the data set towards the type of online customer: (Source: Author)

Rules	Antecedent (X)	Consequent (Y)	Support %	Confidence %	Lift%
#1	{second. hand. goods. Online. =No, Do. risk. factors. Influence=Yes, Any.of.the.risk. factors. =Yes}	{Type. Of. online. Customer=Personal user}	9.1	97	1.06
#2	{Gender=Female, Do. Risk. Factors. influence=Yes, Any.of.the.risk.factors.=Yes}		20	95	1.05
#3	{Gender=Female, shop. Online. =Yes, second. Hand. Goods. online. =Yes, Do. risk. factors. Influence=Yes, Influence.the.type.of. second. Goods=Yes, any.of.the.risk.factors.=No}		24	96	1.06
#4	{shop. Online. =Yes, second. hand. goods. Online. =No, Do. Risk.factors. influence=Yes, Influence.the.type.of. second. Goods=Yes, Any.of.the.risk.factors.=Yes}		7.2	96	1.06
#5	{Gender=Female, shop. Online. =Yes, second. hand. goods. Online. =Yes, Influence.the. type. Of. second. Goods=No, Any.of.the.risk.factors.=No}		6.3	95	1.05
#6	{shop. Online. =Yes, second. hand. goods. Online. =Yes, Do. Risk.factors. influence=Yes, Influence.the.type.of. second. Goods=Yes,		31	97	1.07
#7	{Gender=Male, shop. Online. =Yes, Second.hand. goods. Online. =Yes, Do. Risk.factors. influence=Yes, Influence.the.type.of. second. Goods=Yes, Any.of.the.risk.factors.=Yes}		9.1	97	1.07

As can be seen from above in both tables (Table 18 and 19), binary attributes automatically retrieved from the association centred on two specific consequents, namely: *Do risk factors influence the decision to purchase second-hand goods* and the *Type of online user*. It must be noted that, in generating association rules, data with binary variables are deemed fit for efficient output interpretation. To do this, data was retrieved and saved as CSV in excel file. Missing data was quickly replaced with values, but as earlier indicated attributes with binary variables were selected from the entire data set to initiate and generate association between such variables in tandem

with the objective of the present study. The association rule model is found beneath, exhibiting the means through which generation was carried out. (See Figure 9)

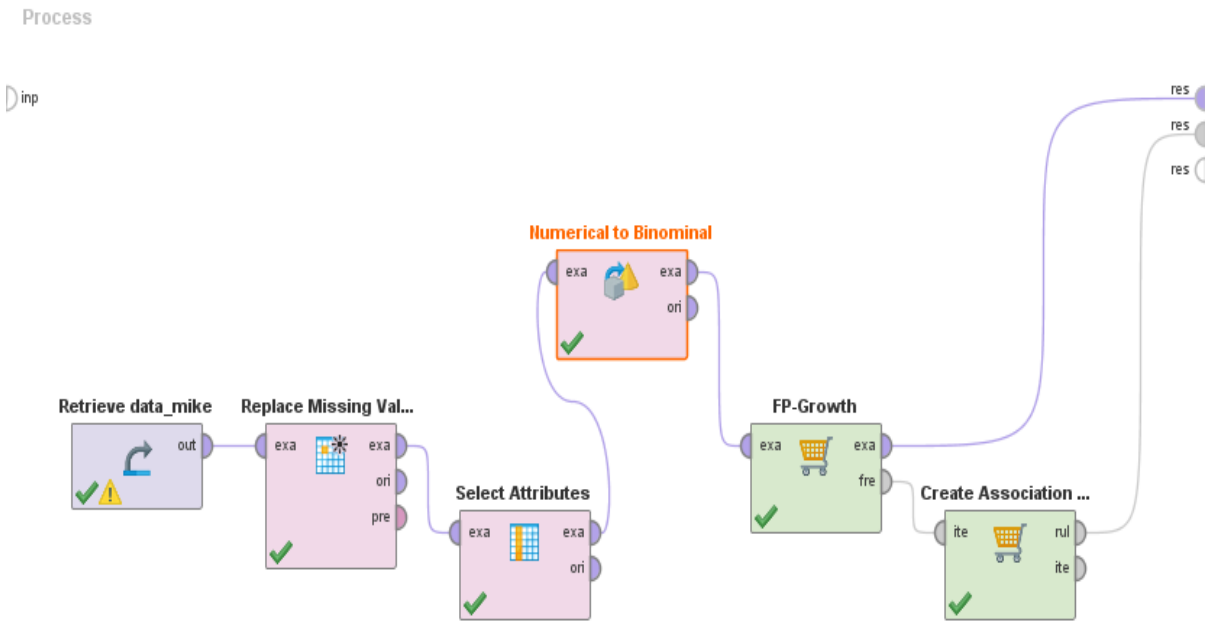

Figure 9: Association rules model (Source: Author)

The figure 10 below also presents the skeletal form of the entire rules generated. The rationale behind association rules is to foremost examine all salient rules embedded in a pool of dataset, specifically between items in an if-then format. In lieu of this and in respect of this present thesis, the generated rules seek to establish the *antecedent* and *consequents* of the data retrieved. It must be emphasized that one of the shortcoming of association rules is the utmost profusion of rules that are generated. Therefore, a need to reduce these rules to a small set of vital rules as have been done in this study by concentrating on rules with stronger rules.

In line with the above explanation and from both table 18 and 19 above, it can be seen that for each of the rules generated, a confidence of more than 90% was ensured. The findings from this section shed more light on the association of Risk factors as an influential decision for customers not to engage in online transactions precisely of used/second-hands goods and the type of online customer as both consequents of our analysis**. In response to Objective 6** of the thesis, the first#2 rule in (Table 17) indicates that when a customer has shopped online before and has not attempted to purchase any used item or goods but with the inclination that this is so because there is an iota of risk factors averting him/her to embark on online for such used goods, then the overriding risk factor or reason of such customers' dwell on the premise of risk as an influence of that decision. This decision as a consequent is accompanied by (96%) confidence indicating a higher association between the antecedent and the consequent. This rule is tied with previous hypothetical finding in section (7.3) that

attested to the fact that Czech customers view some risky components as a bedrock of not engaging in online transactions purposely for used goods.

Consequently, in rule#1 of the same table 19, when a personal user as a binary attribute of the type of online customer pause to make transactions online, yet decides to ignore used goods sections, on the premise of some risky scenarios running in his/her minds which will even go a long way to influence the type of second- hand good should there be, then there can be a conclusion that, those perceived risk factors influenced the customers' decision not to embark on online transactions of used goods. This rule, however is supported by a (100%) confidence with a support of (7. 29%).This intend signifies that Czech online customers been adamant in relocating used goods online is stemmed from some risk factors ingrained in the minds of the customer in question. This is synonymous with the previous finding of the thesis that confirmed some speck of risk components that will avert the customer from hooking up on online in search of used goods. Hence, second-hand vendors in the Czech Republic should take measures to eradicate the fear of psychological trauma coupled with health implications, as a result with stringent assurance of no risk considering these two variables. These two variables have been stated because rules generated specifically points on used goods as a risk factor preventing the customer.

Similarly, in rule #5 of table 18, it can be implied that when a male customer who often connects via online and does not think of initiating second-hand good, then the intervening effect is attributed to the fact that such a male customer perceived some risk factors that thwarts his/her decision for such a transaction with a confidence of (96%) that is a true reflection of such male customer. With a higher confidence and a sizable support coming from this rule, it thus becomes a leverage for second-hand vendors in the Czech Republic to address the risk issues that might avert males' customers not to engage in such transactions.

Again, Rule 1# of Table 19 shows that when a customer decides to abandon second-hand transactions online with the intentions geared towards, financial, psychological, security or health wise, then the overruling sense in this scenario is that indeed this type of customer is a personal user of the computer in the Czech Republic. This decision is supported by (9.1%) accompanying (97%) confidence that this rule is attested in the database. In the same vein, judging from rule #3 of the same table 19, when a Female Czech customer had bought a second –hand good online before but was careful with the type of such second–hand good even though she/he is not under the influence of any risk such as Financial, security etc. then, this type of customer is a personal user and not a business user. This rule, however, is associated with a higher confidence of (96%) with higher support of (24%).This implies that anytime a female Czech customer decides to buy second-hand goods online, then indeed this decision is borne out of no risk yet very circumspect with the kind of second-hand or particular second-hand good. This rule is given an indication to the second–hand vendors to redesign their website in a peculiar manner to meet and provide confidence in the customer. For instance, the websites of shopping sites of brand new goods should not

be design the same like that of the second-hand ones, ranging from the information that will be present there, thus, assurance of other metrics that will lure the customer in those businesses should be initiated.

Alternatively, Rule 4# of Table 18 indicates that when a Male personal user in the Czech Republic has shunned the initiation of second-hand goods online due to the fact risk components influenced that type of second-hand good he/she intended to patronize, probably, books, vintages etc., then the superseding cause of this decision is highly attributed to influence of some risk factors occupying (100%) in the database. This means that, for a male Czech personal user of the internet to disregard second-hand goods as a result of some types of such goods then indeed there is bit of risk in that decision of the customer in question. This is stemmed from the fact that some second-hand goods are likely to pose a higher risk to the customer, for instance second-hand garments are more than expected to put fear in the customer. This claim has been seconded by the works of (Chipambwa, Sithole and Chisosa, 2016)).

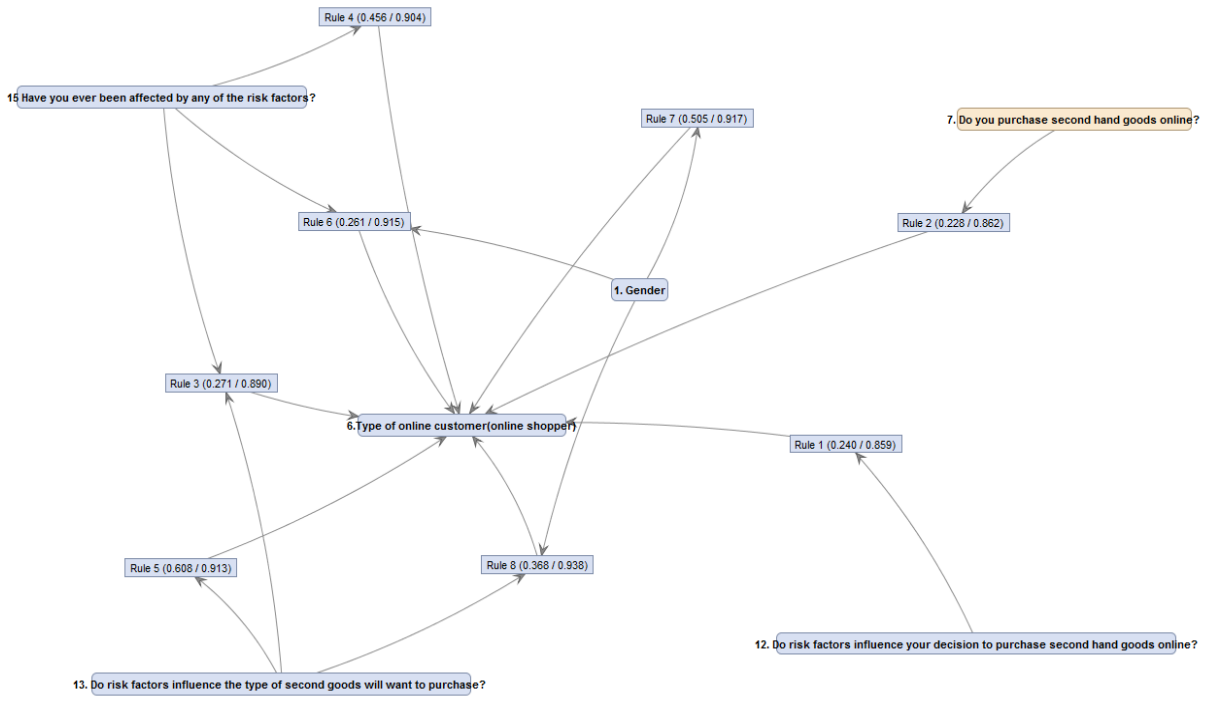

Figure 10: Association rule structure (Source: Author)

7. RELEVANCE AND CONTRIBUTION TO SCIENCE AND PRACTICE

This part of the dissertation draws on the significance and the contributions relating to science and practical management. It also furnishes readers with the innovative issue that has been added to the existing stock of knowledge in both the academia and the industry so far as pre-purchasing risk factors in online transactions of used/second-hand goods are concerned.

7.1 Gains for Scientific Knowledge

This research explored the novel trend governing pre-purchasing risk factors inherent in the consumer within the second-hand market/industry. From the foregoing, through an in-depth analysis ranging from empirical and theoretical literatures, the rationale for online consumer- risk scenarios relating to second-hand goods have been recognized. Thus, this thesis enlists and fills the gaps in literature by coming out with a unique technique geared towards the nexus between online risk components innate in the consumer and the second-hand industry. Hence, the research abreast online vendors with the requisite skills through a rigorous practical and scientific approach in dealing with the risk components in the second-hand industry, given the interplay of the internet in their day to day businesses, and the fact that the internet has come to stay.

Again, this research approach and the methodology in general paves way for a wide-ranging analysis that facilitated an efficient interpretation of consumer sentiments so far as risk to avert them from connecting via internet in search of second-hand goods are concerned. To it, a well blown scientific enquiry in the field of internet marketing and consumer sciences have been ascertained. Thus, by taking a well composed conceptualized framework inculcating both inductive and deductive stance of this thesis, this research, thus provides an up-to -date understanding of the internet or online buying behavior concept championed over the years by researchers. In to say that, this research swayed away from only debating and creating loopholes in literature on online consumer behavior pertaining to second-hand goods, but went ahead to test the situation in a real-world business scenario, of hooking up with customers for answers. In view of the comprehensive framework adopted for this research and to vividly understand the real-world situations governing a peculiar phenomenon, the author is quick to judge that, is vital to adopt both deductive and inductive stance in this research. Moreover, given the enormous research undertaken since the advent of the internet on marketing as a discipline in social sciences, specifically testing on theories

alone without any empirical test may not reflect the true online behavior of customers, of which this thesis has sought to add to the scientific regime of research.

Also, the mere reason that expert opinions were garnered from second-vendors in creating the model for the thesis in the first part of the study enhanced an easier and effective connection of variables pertinent for the thesis. This had a direct repercussions ascribed by respondents in the quest to find answers to the questions posed for the research. It is by no means a true reflection of risk inherent in the customer given the psychological questioning of respondents' in thesis study; Thus through the methodologies adopted for this study. Irrefutably, this research seeks to opine that understanding the true reflection of consumers in online buying behavior is not entirely premised on available figures, yet the combination of mixed approach or procedure, thus, through both qualitative and quantitative enquiry exposes the relevant aspects of behavior intrinsic in the customer for deliberations and making valuable decisions.

Undeniably, this work stands as one of the first in the literature to theoretically and empirically conceptualize an online buying behavior in the context of risk relating to the second-hands goods industry. As a matter of fact, delved into the risk attributes that are likely to avert customers from engaging in such transactions given the worldwide acceptance of the internet. This, in principle has necessitated a variants and numerous researches in literature deliberating on repercussions and antecedents of the internet's usage.

Another unique impact of this research to science is stemmed from the additional analyses carried out from the second phase of the research that sought to apply some data mining algorithms to buttress the point and knowledge of pre-purchasing risk factors inherent in the consumers so far as online second-hand transactions is concerned. In other words, subsequent analyses of the study elicited the antecedents and the consequents emanating from the customers' initiation not to transact online for second-hand goods. This indeed has enacted a recipe for second-hand managers to find an antidote to strengthen their visibility onsite. This in no doubt has done the trick for second-hand vendors to a directed human resource. Hence, this study can be touted as the first to appear in literature with a requisite and empirical evidence to the effect of scientific community.

7.2 Gains for Practical Knowledge

This research is in no doubt a contribution to the sustainability of second-hand vendors across the length and breadth in the Czech Republic, even as literature has affirmed that second-hand market is still seen under the lenses of small and midsized enterprise. Further, the study brings to fore salient risk elements embedded in the whole online buying fraternity in the second-hand industry. The study offers practical coupled with a well analyzed results that will aid mangers in the second-hand industry to understand and position themselves given the multiple risk factors that tend to avert customers from connecting via online in search of second-hand goods.

Secondly, it cannot be contravened that the sustainability and the competitivity in the second-hand industry or market is geared towards the tendency to understand the risk components in-built in the consumer in question regarding his/her decision to initiate such transactions. The managerial implication here is that, the competitive and sustainable ability of a company is positively related to its ability to realize and measure the weighty role individuals'/customers' relative importance (risk) plays in consumer decisions making. Thus, for online used goods vendors to be successful in consumer markets, they do not have to concentrate only on their internal activities, but also, they must understand and take precautionary measures regarding risk factors that might attempt to avert the customer to patronize in their business, given the worldwide technological dispensation beseech nowadays.

Again, this study relays vital information on pertinent risky factors that exist in the online transaction of second-hand goods market and subsequently provides additional information on the trade-off risk factors consumers consider is such transactions. In view of this hard to find variables retrieved through the results of this study, second-hand vendors irrespective of the size of their business in the Czech Republic can take cue of such risk and flourish in the shorter to longer run in operation. This information will intend assist them to plan and design their websites activities with caution and circumspection. Since, results of the study as earlier stated has shed more light on the magnitude of risk ascribed by respondents in the research.

This research broadens the horizons of risky components accomplished in the consumer by employing other data mining algorithms in the study to delve into real scenarios of risky components, since risk to avert holds a complex understanding in its nature. But with the help of these algorithms, a new measure has been reinvigorated regarding the risk to avert customers from connecting via online in search of second-hand goods. This by no small measure will assist second-hand vendors in their day to

day operations in terms of innovative stance to meet the requirements of customers online.

Furthermore, the results of the study have indicated some regions in the Czech Republic that vendors should be wary of in the event of online second-hand operations. This is to say that, some notable regions in the Czech Republic frowns at the idea of engaging in online transactions of second-hand goods which would have been difficult to come by and taken measures to curb some situations. By the stream of this study, vendors in that region can practically re-engineer their operations onsite to meet the demands of their respective customers.

Moreover, the study adds to the existing managerial practices instituted in the second-hand industry as a whole by offering guidance on the possible risk factors that tends to discourage prospective customers to connect via online for their activities. This is not limited to the Czech Republic alone, but all over the world, as in the case of rampant outburst of second-hand industry on online platforms for clearer visibility nowadays. It is on this premise that the study has sought to enumerate some possible risk to aid vendors how best they can sustain and outcompete in their business. This will in no small measure be an informant on the directed human resource as earlier stipulated to strengthen the visibility onsite and to design a robust website to man the operations of second-hand business.

Finally, the demographic revelation of risky scenarios exposed, the study will aid second-hand vendors to position the peculiar products in tandem with the demands of their customers. This may rekindle the addition and multiple of goods at onsite depending on the risky demographic relations stimulated in this research.

8. CONCLUSION, LIMITATIONS AND SUGESTIONS FOR FUTURE RESEARCH

This part of the thesis encompasses three stages. It enlists and provides details by way of concluding thoughts of the study and elaborate on the key findings in the dissertation, accompanied with recommendations, highlights on the available limitations of the study and go ahead to suggest areas that can be advanced by future and other researchers in the field of internet or online buying behavior.

8.1 Conclusion

The risk is inevitable given consumers' intention to shop via online especially when the said goods is a second–hand good. For the second-hand vendors who have transitioned to online platforms for sales to flourish and gain market share, it is imperative to understand the attributes that tends to avert consumers in dealing with such transactions coupled with the possible trade-offs that transpire within the whole initiation of online transactions. Second-hand vendors should be wary of what draws the customer back in the event of connecting via online as earlier stipulated, by implementing strategies that will not deter such transactions. In a wider spectrum, the online risky buying behavior inherent in the customer should be analyzed to proffer pragmatic strategies to inculcate confidence in the customer. That is to say, other metrics in the website should be highly dependable in all spheres of the second-hand goods transactions to safeguard the business, since a series of literatures has affirmed that the second-hand goods are not living in extinction anytime soon. This dissertation analyzed and took a deeper stance on indirectly unravelling the hidden treasures inherent in the consumer given the risky components that are likely to avert the customer from engaging in online transactions specifically second-hand goods. This dissertation was organized in two streams, the first part of the research investigated the in-built risky components in consumers' taking inspiration from the Conjoint analytical theory with the suitability of the traditional conjoint methodology as one taxonomy of CA fraternity. This was on the premise of the scanty research that psychologically look beyond the risk components inherent in the consumer to avert them from engaging in online transactions in spite of the enormous expansion of the second hand market. The second part of the research adopted some data mining algorithms (notably; Association rule mining concepts and non-hierarchical clustering concepts) to mine relevant patterns hovering around the tendency of the online customer or customers in general to connect via online purposely for second hand goods. The third part took an inspiration from the perceived risk theory to test the risk components in respect of second-hand goods online. It cannot be gainsaid that this dissertation took both the inductive and deductive approach to solve a comprehensive problem invokes and has been idle age-long in the literature.

The main objective of this research was to create a model focused on modelling consumer aversion to pre-purchasing risk factors in online used goods transactions in

a trade-off setting. The model was entirely based on attributes and their levels; as well as necessary variables that were found to be pertinent in analyzing risky components in-built in the customer with the support of the literature and expert opinions. The model presents a real-world scenario for second–hand vendors or mangers to instill a continuous growth(sustainability) of their industry given the enormous proliferation of second-hand markets hooking up via online platforms for sales nowadays.

As the research also adopted some data mining algorithms to mine relevant patterns governing risk components repressed in the customer to engage in such transactions. It was revealed that some designated regions in the Czech Republic tends to perceive some uncontrollable risk in the event of online transactions of second-hand goods as opposed to the other regions. Especially respondents from regions such as Vysocina, Pardubicky and Kralovehradecky were found to be very cautious in such transactions even though most respondents in those regions have embarked on online transactions before, the irony here is that, most respondents do not tend to look for second hand goods in spite of the fact that, there are numerous second-hand websites located in those regions.

Also, it was ascertained that females whose age are ranging between (25-35) were seen and to be classified as riskier in attempt to connect via online in search of second-hand goods. And these demographic categories attributed such risk to security and financial reasons.

In line with the sub-objectives of the dissertation, **the first objective** identified pertinent attributes and accompanied with their respective levels by scanning through literature and also seeking expert opinions. This was done in line with the approach instituted for unravelling the hidden risk embedded in online customers as far as second –hand goods are concerned. To ensure reliability of the attributes and their levels, an audit were undertaken to elicit possible risk components and also to analyzed the magnitude of such risk to the consumer. This analyses took two streams, basically on risk in online transactions and the used goods risk. A proper audit automatically deleted some of the risk components that was listed, hence relevant attributes were finally drawn for experimental design.

The second- objective on the other hand sought to design a conjoint analyses model that rightly represents consumers pre-purchasing hesitancy (aversion) intentions towards online transacted second –hand goods. In analyzing this objective, it was revealed that consumers' pre purchasing hesitancy(risk) in the Czech Republic was hinged on Healthy scenarios., followed by Financial risks, whiles Security risk as a risky or hesitancy attribute follow suit. However, the Psychological risk attribute was seen to be insignificant in the Czech Republic.

The **third sub- objective** took a step further to delve into the other risk or hesitance models in line with pre purchasing scenarios. That is to say, look into the magnitude of such risk in terms of the levels associated with the enumerated risks. Therefore, the analyses of these interrelationships or so to say trade-offs in the respondents showed

that consumers resulted as Financial risk respondents are Not concerned, Security wise respondents seek for their integrity, psychologically respondents are keen on the Appearance of the used good while in Healthy situations respondents are much particular about the recyclable nature of the used good in question.

The **fourth sub- objective** examined the influence of a perceived risk factors on the decision to embark on online second-hand goods transaction by taking a deductive research approach fused into the theory of perceived risk to test whether indeed there is an association or otherwise relationship between decision and any initiation of online second hand transactions in that caliber. The results indicated that the risk components do not determine the tendencies or the penchant of the customer to hook up via online for the purchase of used goods. Yet, the zeal to purchase used goods online is associated with some risk factors.

The **fifth sub-objective** determined the choices of each socio-demographic group in relation to the enlisted risk attributes. This objective was accomplished, as it was deduced that in spite of the risk attributes that tends to avert the consumers in the Czech Republic from connecting via online in search of second-hand goods. Financial risk was declared as the riskiest scenario from demographic groups in the Czech Republic. A step further to mine the patterns in the risk components also attested to this fact with security reasons attached to the demographic stance of pre-purchasing risk factors. Cautious measures from this results should be a guiding principle in the website design in the near future to deter respondents from not connecting via online for second-hand goods since money is one of the crucial elements of the self and hard to come by nowadays.

The **last sub –objective** took inspiration from the Association rule mining theory to analyze the magnitude of risk components inherent and associated with the customer in the bid to purchase second-hand goods online. The analyses indicated two streams of consequents namely; the personal user and the risk as an influence of risk in connecting via online for second –hand goods. Given the entire risky components embedded in the customer, it was revealed that anytime Czech online customers pause to connect via online and there are some risky scenarios in their minds not to get on second –hand goods, the overriding association is attributed to a personal user of the internet or some iota of perceived influence inhibited in the mind of such a person. This results are essential and a wake-up call for managers to find an antidote to such associations averting customers not to engage on second-hand goods even though they connect via online for other things.

One **NOVEL AND OUTSTANDING** forte of this dissertation is the ability to introduce the conjoint analysis that officially works as a preference modelling approach into a hesitancy (risk) approach that this research sought to use in different sphere in the academia. This research stands to be one of the opener in the contemporary researches. Again, the novel integration of some data mining algorithms used along with the conjoint theory provides a gateway for other researchers in the

marketing field to apply more techniques in subsequent research to enhance concrete and quality output of research.

In sum, the theme of the dissertation was accomplished ranging from the design and the analytical aspect. That is to say, all objectives were realized with subsequent research questions answered. Again, the two hypothesis were retorted to in line with the comprehensive framework that guided the dissertation.

The author will like to reiterate that similar results of this caliber in the thesis have been published in both impacted and other databases

8.2 Limitations of the Dissertation

Unlike any other research, this study is not immune to limitations. While there are multiple reasons that can be outlined in the limitations. It is expedient and reasonable to outline some of the set-back of the research that stands out. First, the enumerated attributes used for the first phase of the study might not be adequate enough to represent the entire pre purchasing risk components in spite of the stringent audit the author took to settle on the possible risk attributes, I must emphasize. This is as a result of the fact that some of the risk considered, respondents have no control on them. However, this is where the trade-off modelling made possible by the conjoint analysis method, validates the study, especially in the choice of the attributes (risks).

Again, one fundamental limitation of the study is attributed to smaller sample size as a result of scanty resources. However, the author is quick to point out that, the technique used for the first phase met the threshold of possible sample mostly adopted by pioneering researchers in the marketing field. In the same vein, data mining algorithms work well with a large pool of dataset, yet data used for the research cannot be undermined.

Moreover, the study shed a limitation of adopting exploratory factor analysis for further analysis which ordinarily should not have been worked or mostly applicable for multivariate analysis or construct and not univariate analysis as seen in my data. However, to prune the variables into smaller but optimized set of variables for further analyses like the clustering and association rules analyses, it was vital to hinge on some attributes of exploratory factor analyses and principal component analyses to carry out those further analyses.

Finally, the study shed a limitation of not specifying the business model of the second-hand vendors, thus either in business-to-consumer, business-to-business, consumer-to-business, or consumer-to-consumer type of model as well as the particular kind of second-hand goods traded online for deliberations. This limitation is partially hinged on the fact that the main analogy of the study was to look at the pre-purchasing risk factors, as earlier stipulated.

8.3 Suggestion for future work

Unanimously, these research findings in general, serves as a wake-up call for scholarly debate in the online buying or internet buying field of Marketing Management. It is on this premise that this research is calling up for scholars to channel their attention to the areas in the academic environment where scanty research output exists. This is to say that; more attention should be focused on developing countries, where internet or online buying has been a challenge to really access the fundamental problems that tend to discourage them from not connecting via online most importantly when such transactions tend to be a second-hand good. This is on the premise that the internet has come to stay and is not living in extinction anytime soon. Another thought of advice on this note, is to extend the attributes used in this study to meet the demands of the developing world to validate the conceptual model of the study.

Again, future researchers can vividly look at the type of model of the second-hand vendor, this will help give a clearer picture of the entire study. This is because, there are numerous business models associated with each vendor on the marketing front. Future researchers are by this note advised to look at the research from the point of each second-hand vendor business model. To add to this, future researchers in online or internet marketing considering second-hand goods online should endeavor to specifically work on the type of second-hand good traded online. In the case of analyzing the pre-purchasing risk factors, I suggest researchers to consider individual dimension pertaining to the second-second hand industry.

As with any other suggestions, other techniques like the decision tree classification, discriminant analyses among others can also be employed in the future to delve into the pre purchasing risky components in-built in the consumer.

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3. Nabareseh, S, Afful-Dadzie, E, **Kwarteng, M.A**, Klimek P. A bibliometric study of the research output of Visegrad countries. In Proceedings of the 13th international conference on applied computing

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1. Afful-Dadzie, E., Oplatková, Z. K., Nabareseh, S., & **Kwarteng, M.A**. (2016). Development Aid Decision Making Framework Based on Hybrid MCDM. In Intelligent Decision Technologies 2016 (pp. 255-266). Springer International Publishing. http://link.springer.com/chapter/10.1007/978-3-319-39630-9_21

CURRICULUM VITAE

PERSONAL INFORMATION	Ing. Michael Adu Kwarteng

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+420773092067
adukwart@gmail.com or Kwarteng@utb.cz
http://scholar.google.com/citations?user=VVE5nIkAAAAJ&hl=en
Sex Male | Date of birth 06/October/1986 | Nationality Ghanaian

WORK EXPERIENCE September 2015-to date	Seminar Lecturer (Department of Management and Marketing) Tomas Bata University in Zlin • Advanced Management and Marketing • Digital Marketing • Brand Management • B2B Marketing
Jan 2015-June 2015	English Language Teacher (European Union Project) Jayskola Lingual Skola • Teaching English language in Zlin Region • Proof reading
September 2015-June 2016	English Language Teacher (Zelenka Company Limited) • Teaching English Language in Companies (Lapp cable, Aukro) • Proof Reading

November, 2011-Dec. 2013

Senior Administrative Assistant
University of Cape Coast, Cape Coast-Ghana

- Responsible for the day-to-day management and supervision junior staffs.
- Writing reports to the Director of Institute of Education
- External supervisor for all colleges of Education, Ghana.
- Responsible for all research activities at the Institute

- Business or sector Institute of Education

September, 2009-October. 2011

National service person
Komfo Anokye Teaching Hospital, Kumasi - Ghana

- Seeking welfare of patients as well as staffs of Komfo Anokye teaching hospitals
- Writing reports to the Chief Executive Officer
- Educating patients and staff on child abuse and domestic violence which result in health problems
- Going on ward rounds
- Business or sector Komfo Anokye Teaching Hospital

EDUCATION AND TRAINING

2015-Date

Ph.D. student (Management and Marketing)

Tomas Bata University in Zlin –Czech Republic

June,2015 MSc.(Management and Marketing)

Tomas Bata University in Zlin-Czech Republic

June,2009 Bachelor of social sciences (Economics and Sociology)

University of Cape Coast-Ghana

Dec,2003 Senior Secondary Certificate Examinations(SSCE)
St John's School, Sekondi

PERSONAL SKILLS

Organisational / managerial skills

- **Secretary**: Student for Democratic Development - University of Cape Coast from 2008 - 2009
- **Member**: Young Peoples Guide, Presbyterian Church, Cape Coast from 2011 - 2013

Training received

- Community development workshop by National Service Scheme (2010)
- In service training for staff of Komfo Anokye (Social welfare unit)
- Databank's (Economic School Seminar-U.C.C) (2010)
- Basic & Intermediate Computer Training
- Training course of Cluster and Principal component analysis (2017)

Computer Literacy

Statistical software packages RapidMiner, XLSTAT, SPSS etc.

Business Process Navigant software, and Aris software

Management

Hobbies

- Reading
- Football
- Table Tennis

ADDITIONAL INFORMATION

Honours and awards

- Rector's Extra Ordinary Scholarship at Tomas Bata University
- Best National Service worker at KATH in 2009-2010 (Social Welfare Unit)

Professional and project activities

- Head of the research Team," Enterprise's Competitiveness Influenced by Consumer Behaviour on Traditional and Online Markets", the Internal Grant Agency of FaME TBU No. IGA/FaME/2016/006.
- Member of the Research Team," Enterprise competitiveness using sentiment analysis for Product and process optimization in the Czech Republic" the Internal Grant Agency of FaME TBU No IGA/FaME/2016/019.

Professional Affiliation

Marketing students Association (Tomas Bata University)

- International students Association, Czech Republic (Member since 2014)
- Federation of Senior staff Association of Ghana (Member since 2011)

ANNEXES

References

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APPENDICES

Appendix A: Descriptive statistics

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	181	55.0	55.0	55.0
	Male	148	45.0	45.0	100.0
	Total	329	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	232	70.5	70.5	70.5
	26-35	52	15.8	15.8	86.3
	36-45	24	7.3	7.3	93.6
	46+	21	6.4	6.4	100.0
	Total	329	100.0	100.0	

Highest Educational

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's degree	157	47.7	47.7	47.7
	Doctoral degree	3	.9	.9	48.6
	High School	130	39.5	39.5	88.1
	Master's degree	39	11.9	11.9	100.0
	Total	329	100.0	100.0	

Region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hlavni Mesto Praha	13	4.0	4.0	4.0
	Jihocesky Region	13	4.0	4.0	7.9
	Jihomoravsky Region	23	7.0	7.0	14.9
	Karlovasrky Region	16	4.9	4.9	19.8
	Kralovehradecky Region	11	3.3	3.3	23.1
	Liberecky Region	14	4.3	4.3	27.4
	Moravskoslezský Region	14	4.3	4.3	31.6
	Olomoucký Region	17	5.2	5.2	36.8
	Pardubicky Region	14	4.3	4.3	41.0
	Plzeňský Region	12	3.6	3.6	44.7
	Stredocesky Region	20	6.1	6.1	50.8
	Ustecky Region	11	3.3	3.3	54.1
	Vysocina Region	18	5.5	5.5	59.6
	Zlinsky Region	133	40.4	40.4	100.0
	Total	329	100.0	100.0	

shop online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	24	7.3	7.3	7.3
	Yes	305	92.7	92.7	100.0
	Total	329	100.0	100.0	

Type of online customer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		8	2.4	2.4	2.4
	Business Person	23	7.0	7.0	9.4
	Personal user	298	90.6	90.6	100.0
	Total	329	100.0	100.0	

Purchase second hand goods online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	87	26.4	26.4	26.4
	Yes	242	73.6	73.6	100.0
	Total	329	100.0	100.0	

Do you consider Risk factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		76	23.1	23.1	23.1
	No	91	27.7	27.7	50.8
	Yes	162	49.2	49.2	100.0
	Total	329	100.0	100.0	

Type of second goods purchased

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		96	29.2	29.2	29.2
	Antiques	30	9.1	9.1	38.3

	books	66	20.1	20.1	58.4
	cars	28	8.5	8.5	66.9
	cars, cloths	1	.3	.3	67.2
	clothes	59	17.9	17.9	85.1
	Furniture, Jewelry, arts	49	14.9	14.9	100.0
	Total	329	100.0	100.0	

risk factors consider

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		85	25.8	25.8	25.8
	Financial risk	82	24.9	24.9	50.8
	Health risk	33	10.0	10.0	60.8
	Psychological risk	48	14.6	14.6	75.4
	Security Risk	81	24.6	24.6	100.0
	Total	329	100.0	100.0	

why don't you purchase second hand goods online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		171	52.0	52.0	52.0
	Financial risk	35	10.6	10.6	62.6
	Health risk	33	10.0	10.0	72.6
	Psychological risk	37	11.2	11.2	83.9
	Security risk	53	16.1	16.1	100.0
	Total	329	100.0	100.0	

Risk factors influence decision to purchase second hand goods online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	92	28.0	28.0	28.0
	Yes	237	72.0	72.0	100.0
	Total	329	100.0	100.0	

Risk factors influence type of second goods to purchase

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	110	33.4	33.4	33.4
	Yes	219	66.6	66.6	100.0
	Total	329	100.0	100.0	

Risk factors ready to trade off

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		38	11.6	11.6	11.6
	Financial risk	51	15.5	15.5	27.1
	Health Risk	48	14.6	14.6	41.6
	Psychological risk	87	26.4	26.4	68.1
	Security risk	105	31.9	31.9	100.0
	Total	329	100.0	100.0	

Affected by any of the risk factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	166	50.5	50.5	50.5
	Yes	163	49.5	49.5	100.0
	Total	329	100.0	100.0	

Risk factor mostly affecting attempt to purchase second goods

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		111	33.7	33.7	33.7
	Financial risk	75	22.8	22.8	56.5
	Health risk	33	10.0	10.0	66.6
	Psychological risk	48	14.6	14.6	81.2
	Security risk	62	18.8	18.8	100.0
	Total	329	100.0	100.0	

Remedies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Encrypted or more secured website	87	26.4	26.4	26.4
	Enhance recycling methods	59	17.9	17.9	44.4
	Proper initiation of delivery channel	90	27.4	27.4	71.7
	Protection of personal data	93	28.3	28.3	100.0
	Total	329	100.0	100.0	

Appendix B: Results from conjoint analyses

Utilities(Risk) (Descriptive statistics):				
Source	Minimum	Maximum	Mean	Std. deviation
Intercept	6.0833	6.7500	6.4949	0.0601
Financial Risk-Highly concerned	-4.9005	4.9292	-0.9463	2.1620
Financial Risk-Indifferent	-3.4047	2.7568	0.2555	1.2555
Financial Risk-Not concerned	-4.2191	4.9005	0.6908	1.6772
Security Risk-Availability	-3.2271	3.5797	0.0261	1.1042
Security Risk-Confidentiality	-4.8776	4.1265	-0.3722	1.3407
Security Risk-Integrity	-2.8451	4.8887	0.3461	1.3502
Psychological Risk-Appearance of goods	-2.3293	3.4500	0.4430	1.0434
Psychological Risk-Information Asymmetry	-3.4500	2.3293	-0.4430	1.0434
Health Risk-Contracting a disease(from previous owner	-3.4519	3.2548	-1.6577	1.5856
Health Risk-Not reusable (recyclable)	-3.2548	3.4519	1.6577	1.5856
Relative Importance (Risk) (Descriptive statistics):				
Source	Minimum	Maximum	Mean	Std. deviation
Financial Risk	0.4405	99.2360	31.3893	27.4015
Security Risk	0.0000	98.7792	17.1027	19.4972
Psychological Risk	0.0000	94.2545	11.8015	15.1576
Health Risk	0.0000	98.4040	39.7065	30.6912

Appendix C: Questionnaire for consumers (English format)

Dear Sir/Madam,

I am a PhD candidate at the Tomas Bata University in Zlin, Czech Republic. This questionnaire has been designed to carry out a research on the above topic for academic purposes. All information provided will be used solely and exclusively for academic purposes and would be treated with the necessary confidentiality it deserves. Information provided would be used to make sound empirical analysis in order to measure and understand user consumer aversion and trade-off towards pre-purchase risk factors in online used goods market. Thank you for your zeal to help in no small measure to carry out this research.

Sincerely,

Ing. Michael Adu Kwarteng.
Faculty of Management and Economics
Department of Marketing and Management
Tomas Bata University in Zlin
Czech Republic
Email: Kwarteng@utb.cz
* Required

1. Gender *

- Male
- Female

2. Age *

- 18-25
- 26-35
- 36-45
- 46+

3. Highest Educational Level *

- High School
- Bachelor's degree
- Master's degree
- Doctoral degree

4. Type of online customer (online shopper) *

- Business person
- Personal user
- Other:

5. In which Region are you located in the Czech Republic? *

- Hlavni Mesto Praha
- Stredocesky Kraj
- Jihocesky Kraj
- Plzeňský Kraj
- Karlovasrky Kraj
- Ustecky Kraj
- Liberecky Kraj
- Kralovehradecky Kraj
- Pardubicky Kraj
- Kraj Vysocina
- Jihomoravsky Kraj
- Olomoucký Kraj
- Zlinsky Kraj
- Moravskoslezský Kraj

6. Profiles of factors you consider most important(Aversion) when purchasing used goods online. Each of the attributes (Risks) has levels of aversions that must be considered in the ranking in question 6. ***For instance, if you rank profile 2 as 1, it means that the combination of factors that pose threat to avert you most when shopping online for used goods are: Financial (Not concerned) Security (Confidentiality) Psychological (Appearance of good) Health (Not reusable-recyclable)***

Observation	Financial Risk	Security Risk	Psychological Risk	Health Risk	Ranking
Profile1	Indifferent	Integrity	Appearance of goods	Contracting a disease(from previous owner	
Profile2	Not concerned	Confidentiality	Appearance of goods	Not reusable (recyclable)	
Profile3	Indifferent	Integrity	Information Asymmetry	Not reusable (recyclable)	
Profile4	Not concerned	Confidentiality	Information Asymmetry	Contracting a disease(from previous owner	
Profile5	Indifferent	Availability	Information Asymmetry	Not reusable (recyclable)	
Profile6	Indifferent	Confidentiality	Appearance of goods	Contracting a disease(from previous owner	
Profile7	Not concerned	Integrity	Information Asymmetry	Contracting a disease(from previous owner	

Profile8	Highly concerned	Availability	Information Asymmetry	Contracting a disease(from previous owner	
Profile9	Highly concerned	Confidentiality	Information Asymmetry	Not reusable (recyclable)	
Profile10	Highly concerned	Availability	Appearance of goods	Contracting a disease(from previous owner	
Profile11	Highly concerned	Integrity	Appearance of goods	Not reusable (recyclable)	
Profile12	Not concerned	Availability	Appearance of goods	Not reusable (recyclable)	

* Guided by the table in question 6, If these profiles (1-12) were the only options available of characteristics you would consider most important(aversion) before you initiate a purchase on second-hand goods online, how would you rate them (1-12) in terms of the ***most preferred*** (1) to the ***least preferred*** (12). *
Note: Select one number for each row. 1 is your most preferred profile in that order to 12, the least preferred profile.

7. Do you shop online? *
- Yes
- No

8. Do you purchase second-hand goods online? *
- Yes
- No

9. If Yes, do you consider risk factors when considering the purchase of second hand goods online
- Yes
- No

10. If yes to question 7, which type of second goods do you mostly purchase online?
clothes
books
cars
Furniture, Jewellery, arts
Antiques
Other:

11. If Yes to 7, what are some of the risk factors you consider
- Financial Risk
- Security Risk
- Psychological Risk
- Health Risk

12. If No to question 8., why don't you purchase second-hand goods online?
- Financial Risk
- Security Risk

- Psychological Risk
- Health Risk

13. Do risk factors affect your decision to purchase second-hand goods online?
    - Yes
    - No

14. Do risk factors affect the type of second-hand goods you purchase online?
    - Yes
    - No

. 15. Which risk factors are you ready to trade off in an attempt to purchase second goods?
    Financial risk
    Security risk
    Psychological risk
    Health Risk

16. Have you ever been affected by any of the risk factors? *
    Yes
    No

17. If YES, which risk factor will mostly affect your attempt to purchase second goods online?
    Financial risk
    Security risk
    Psychological risk
    Health risk

18. What in your view needs to be done to increase your interest in our pre-purchase decision of second goods online? *
    Encrypted or more secured website
    Protection of personal data
    Proper initiation of delivery channel
    Enhance recycling methods

Thank you very much for your cooperation!

Appendix D: Questionnaire for consumers (Czech format)

Vážený pane / paní,

Jsem doktorandem na Univerzitě Tomáše Bati ve Zlíně, Česká republika**.** Tento dotazník byl navržen k provedení výzkumu na výše uvedené téma pro akademické účely. Veškeré poskytované informace budou použity vyhradně pro akademické účely a bude se s nimi zacházet s nezbytnou důležitostí. Poskytované informace by se použily k provedení spolehlivé empirické analýzy, tak aby bylo možné měřit a pochopit uživatelskou averzi vůči spotřebitelům a naložit tak s rizikovými faktory před nákupem na trhu s použitým zbožím na internetu. Děkujeme za Vaši pomoc, které si velmi vážíme. Bude velkým přínosem pro náš výzkum.
Prosím Vás, o upřímné odpovědi.
Děkuji.
S úctou,

Ing. Michael Adu Kwarteng.
Fakulta managementu a ekonomiky
Univerzita Tomáše Bati ve Zlíně
Česká republika
Email: Kwarteng@utb.cz
* Required

1. Pohlaví

- Muž
- Žena

2. Věk *

- 18-25
- 26-35
- 36-45
- 46+

3. Maximální dosažené vzdělání *

- Střední škola
- Bakalářský titul
- Magisterský / inženýrský titul
- Doktorský titul

4. Jaký jste typ online zákazníka (při nakupování)? *

- Využití pro pracovní účely

- Osobní využití
- Ostratní, jaké:

5. Ve kterém z níže uvedených regionů v České republice žijete? -

- Hlavni Mesto Praha
- Stredocesky Kraj
- Jihocesky kraj
- Plzensky Kraj
- Karlovarsky kraj
- Ustecky kraj
- Liberecky kraj
- Kralovehradecky kraj
- Pardubicky kraj
- Kraj Vysocina
- Jihomoravsky kraj
- Olomoucky kraj
- Zlinsky kraj
- Moravskoslezsky kraj

6. Profily faktorů, které považujete za nejdůležitější (Averze) při nákupu použitého zboží online. Každý z atributů (Rizik) mají různé úrovně averzí, které je třeba vzít v úvahu při zařazení do otázky číslo **6.** ***Například, pokud hodnotíš profil č.2 jako 1, znamená to, že kombinace faktorů, které ohrožují nejvíce při nákupu online pro použité zboží jsou: Finanční (nezajímá se), Bezpečnost (Důvěrnost), Psychologické (Vzhled produktu), Zdraví (Není opakovaně použitelný – recyklovatelný).***

Pozorování	Finanční Risk	Bezpečnostní Risk	Psychologický Risk	Zdravotní Risk	Hodnocení
Profil1	Průměrný/Lhostejný	Poctivost/Čestnost	Vzhled produktu	Dostanete nemoc od předchozího majitele	
Profil2	Bez starosti	Důvěryhodný	Vzhled produktu	Nepoužitelný (recyklovatelný)	
Profil3	Lhostejný	Poctivost	Informační asymetrie	Nepoužitelný (recyklovatelný)	
Profil4	Bez starosti	Důvěrnost	Informační asymetrie	Chytit nemoc od předchozího majitele	
Profil5	Lhostejný	Dostupnost	Informační Asymetrie	Nepoužitelný (recyklovatelný)	

Profil6	Lhostejný	Důvěrnost	Vzhled produktu	Chycení nemoci od předchozího uživatele	
Profil7	Bez starosti	Zásadovost	Informační asymetrie	Chycení nemoci od předchozího uživatele	
Profil8	S hodně starostma	Dostupnost	Informační asymetrie	Chycení nemoci od předchozího majitele	
Profil9	S hodně starostma	Důvěrnost	Informační asymetrie	Nepoužitelný (recyklovatelný)	
Profil10	S hodně starostma	Dostupnost	Vzhled produktu	Chycení nemoci od předchozího majitele	
Profil11	S hodně starostma	Poctivost	Vzhled produktu	Nepoužitelný (recyklovatelný)	
Profil12	Bez starosti	Dostupnost	Vzhled produktu	Nepoužitelný (recyklovatelný)	

*
Uvedené tabulkou k otázce 6,
Pokud jsou uvedené profily (1 – 12) jedinými dostupnými možnostmi v určování charakteristik, které byste považovali za nejdůležitější (averse). Předtím než vůbec začnete nakupovat použité zboží online, jak byste je ohodnotili (1 -12) ve škále od **nejvýhodnější (1)** až **nejméně preferované (12**). *

Poznámka: Vyberte jedno číslo pro každý řádek. 1 je nejvíce preferovaný profil v tomto pořadí oproti 12, který je nejméně preferovaný.

7. Nakupuješ online? *
   Ano
   Ne

8. Koupíte zboží z druhé ruky online? *
   Ano
   Ne

9. Pokud ano, zvažujete rizikové faktory při nákupu zboží z druhé ruky online?
   Ano
   Ne

10. Pokud jste odpovědeli ano na otázku 7, který druh druhého zboží nakupujete většinou online?

Oblečení
knihy
auta
nábytek, šperky, umění
starožitensti
jiné:

11. Pokud jste odpověděli ano na otázku 7, jaké jsou některé z rizikových faktorů, které považujete za důležité?

Finanční rizika
Bezpečnostní rizika
Psychologická rizika
Zdravotní rizika

12. Pokud jste odpověděli ne na otázku 8, proč nenakupujete zboží z druhé ruky online?

Finančí rizika
Bezpečnostní rizika
Psychologická rizika
Zdravotní rizika

13. Ovlivňují rizikové faktory vaše rozhodnutí koupit zboží z druhé ruky online? *

Ano
Ne

14. Ovlivňují rizikové faktory druh zboží z druhé ruky, který bude chtít koupit? *

Ano
Ne

15. Které rizikové faktory jste ochotni ignorovat za pokus o nákup zboží z druhé ruky?

Finančí rizika
Bezpečnostní rizika
Psychologická rizika
Zdravotní rizika

16 Byl (a) jste někdy ovlivněn některým rizikovým faktorem? *

Ano
Ne

17.Pokud ANO, který rizikový faktor bude většinou ovlivňovat váš pokus o nákup druhého zboží?

Finančí rizika
Bezpečnostní rizika
Psychologická rizika
Zdravotní rizika

18. Co je podle Vás nutno udělat, abyste zvýšili zájem o rozhodnutí o předběžném nákupu zboží z druhé ruky online? *

Šifrovaný nebo zabezpečený web
Ochrana osobních údajů
Správné zahájení doručovacího kanálu
Zlepšete metody recyklace

Mnohokrát Vám děkuji za spolupráci!

Declaration:

I do here by declare that all the information given by me above is true and correct.

Place	**Zlin, Czech Republic**	
Date	**20.07.2018**	**(Michael Adu Kwarteng)**

Ing. Michael Adu Kwarteng

Modelling Consumer Aversion and Trade –offs towards Pre-Purchase Risk Factors in Online Second Hand Goods Market

Modelování averze a kompromisů spotřebitelů k faktorům předkupního rizika na online trhu s použitým zbožím

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