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CUSTOMER-BASED BRAND EQUITY EVALUATION OF ONLINE-RETAILER IN RUSSIAN E-GROCERY MARKET

Master's Thesis of 2nd year master student

«Master in management» program

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01.06.2022

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I, Elmira Osmanova, second year master student, program «Master in Management», state that my master thesis on the topic « Customer-based brand equity evaluation of online-retailer in Russian e-grocery market», which is presented to the Master Office to be submitted to the Official Defense Committee for the public defense, does not contain any elements of plagiarism.

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01.06.2022

АННОТАЦИЯ

Автор	Османова Эльмира Романовна
Название магистерской диссертации	Оценка потребительского капитала онлайн-ретейлера на российском рынке по доставке продуктов питания
Факультет	Высшая Школа Менеджмента
Направление подготовки	Менеджмент
Год	2022
Научный руководитель	Старов Сергей Александрович
Описание цели, задач и основных результатов	*Целью* магистерской работы является — построение модели для измерения потребительского капитала бренда для продовольственных онлайн-ретейлеров в России. Для достижения поставленной цели необходимо решить следующие *задачи*: ● Пересмотр существующих моделей потребительского капитала бренда для выявления ключевых подходов ● Определение особенностей потребительского капитала бренда онлайн-ретейлера в контексте существующих моделей ● Обзор российского рынка e-grocery ● Создание анкеты и проведение опроса потребителей услуг e-grocery ● Проведение статистического анализа на основе полученных данных для выделения основных аспектов существующих моделей ● Разработка подходящей модели для измерения потребительского капитала бренда ● Обозначение ограничений и обсуждений для будущих исследований *Результатом* работы стала разработка модели оценивания потребительского капитала для брендов онлайн-ретейлеров продуктов питания , состоящая из 4 измерений: лояльность к бренду, воспринимаемая ценность, качество обслуживания клиентов и восприятие мобильного приложения.
Ключевые слова	Капитал бренда, брендинг, потребительский капитал бренда, продукты ежедневного спроса, экспресс-доставка продуктов, онлайн-ретейл, узнаваемость бренда, лояльность к бренду, ассоциации с брендом, удовлетворенность потребителей, ассоциации с брендом, модель Аакера

ABSTRACT

Master Student's Name	Elmira Osmanova
Master Thesis Title	Customer-based brand equity evaluation of online-retailer in Russian e-grocery market
Faculty	Graduate School of Management
Main field of study	Management
Year	2022
Academic Advisor's Name	Sergey A. Starov
Description of the goal, tasks and main results	The *goal* of the master thesis is to construct the model for measuring brand equity for online retailers of groceries in Russia. To achieve the stated goal, the following *tasks* should be completed: ● Revise the existing models of customer-based brand equity to detect key aspects ● Identify the peculiarities of online retail brand equity in the context of existing models ● Overview of Russian market of e-groceries ● Create a questionnaire and conduct a survey of customers of e-groceries services in Russia ● Conduct a statistical analysis based on the data obtained to highlight the main aspects regarding existing models ● Derive a suitable model for measurement of brand equity ● Outline limitations and discussions for future research The *result* of the thesis is the development of a model for evaluation customer-based brand equity for grocery online-retailer brands, which consists of 4 dimensions: brand loyalty, perceived value, customer service quality and app perception.
Keywords	Brand equity, branding, consumer-based brand equity, e-grocery, express delivery of products, online retail, brand awareness, brand associations, brand loyalty, customer satisfaction, brand associations, Aaker’s model

CONTENTS

INTRODUCTION

Branding is a crucial factor that can bring the company's performance on the higher level, so this field is highly explored by marketing researchers and such exploration continues further. One of the concepts of branding is a brand equity, which can be firm- or customer-based. Customer-based brand equity defines the added value that a company receives from building certain perceptions in consumer's mind. In current situation of high competition rate, it is important to build a strong brand with loyal customers.

This term was observed in a huge number of articles, but there is lack of such literature on online companies' brand equity. This research will contribute to the exploration of specifics of brand equity measurement of online retail companies. In general, the incentives for the chosen topic are the importance of brand equity measurement for the companies, the lack of literature and need for understanding the brand equity as an important part of the marketing.

The online companies' orientation was mainly motivated by the development of electronic commerce. Even without the coronavirus the online businesses were capturing an ever-increasing volume of sales of goods and provision of services. Although recent COVID-19 pandemic made this process even faster. For example, there is a global increase in online purchases, which remains still. (Guthrie et al, 2021)

In addition, in Russia's case, the retail brand equity is relevant due to the growing competition among players on this field. In particular, right now the online retail of daily goods or e-grocery is experiencing a huge rise that was never seen before due to the COVID-19[1]. Although, it is a post-covid period right now and Russia isn't imposing lockdowns, the growth continues. In February 2022, 2.5 times more orders were made than in February 2021, which indicates the ongoing development of the e-grocery market.[2]

The *goal* of the master thesis is to construct the model for measuring brand equity for online retailers of groceries in Russia.

To achieve the stated goal, the following *tasks* should be completed:

- Revise the existing models of customer-based brand equity to detect key aspects
- Identify the peculiarities of online retail brand equity in the context of existing models
- Overview the Russian market of e-groceries
- Create a questionnaire and conduct a survey of customers of e-groceries services in Russia

[1] Resilience lessons, Harvard Business Review, URL: https://hbr-russia-ru.ezproxy.gsom.spbu.ru/biznes-i-obshchestvo/uroki-stoikosti-2020/832618/

[2] Issue of eGrocery newsletter March 2022, Data Insight, URL: https://datainsight.ru/eGrocery_March_2022

- Conduct a statistical analysis based on the data obtained to highlight the main aspects regarding existing models
- Derive a suitable model for measurement of brand equity
- Outline limitations and discussions for future research

The *object* of the master thesis is models for measuring customer-based brand equity. The *subject* of the research is customers of online retailers of groceries in Russia.

The main *methods* of the thesis are the following:

- Review of relevant literature to explore existing approaches and concepts, and to select and adjust an appropriate consumer capital model
- Analysis of the online retail market of groceries to identify common trends and competitors
- Conducting an online survey to collect consumer attitudes and brand associations
- Statistical analysis of the obtained data to identify the most important factors in the model, namely the factor analysis, exploratory analysis and confirmatory factor analysis

The literature review showed that there are several different articles not only about the brand equity, but also about developing new models from older ones in order to fit them into the special frameworks of various business fields. However, such models are suitable for purposes, which are not defined as the online retail of groceries focused. This should be fixed, since developing a strong brand equity is beneficial for a company in many ways. First, brand equity

There are a lot of articles describing brand equity for various businesses like hotel industry, fashion industry, e-learning, healthcare and so on. (Ray et al, 2021) Despite that, the online sector lacks research on brand equity for e-grocery companies, so the further research is vital for this exact sector. Also, even though brand equity was studied deeply by many researchers, there is no consensus on how to measure it (Tolba & Hassan, 2009), so the question of which model is better to use even in discussed fields is still open. Therefore, the *research gap* seems to exist in a way that there is not enough literature regarding the measurement of brand equity for online retailers of groceries specifically, while it is a valuable asset for firms. The benefits of brand equity measurement are broadened in section 1.1.

At the first glance, existing theoretical aspects seem to be relevant for the online retail brands. However, existing studies show that it is it is unclear which of the dimensions will be more applicable to such companies. Hence, *the first research question* can be formulated: What dimensions are suitable for measuring Customer-Based Brand Equity for e-grocery retailers?

In addition, the dimensions inside the model might influence each other in positive or negative directions, so for the full understanding of the future framework those connections should

be explored. In this case, *the second research question* is formulated: How dimensions of a new CBBE model for e-grocery influence each other?

What is more, dimensions of the model will consist of various items. Some of them will influence those dimensions more, some less, while part of them will be even excluded from the final model. Hence, the connections between dimensions and items inside of them should be tested too. From this fact, *the third research question* is derived: What items inside dimensions of the new e-grocery-oriented CBBE model have the highest influence on them?

Overall, the final potential outcome of the research will be a customer-based brand equity model with dimensions significant for e-grocery specifically and a set of recommendations for online retailers of FMCG on how to measure and to improve their brand equity in a right way. Following such instructions may result in achieving stated benefits of brand equity for companies.

The structure of the master thesis consists of three chapters, which allow covering the object, subject and purpose of the study indicated above, as well as answering research questions through the disclosure and observation of the necessary materials. The following parts are presented in the study:

Chapter 1: Theoretical basis of brand equity

The first chapter reviews the existing literature on customer-based brand equity in order to provide definitions, models and main concepts of the topic under study. It consists of three sub-parts, the last of which is focused on the online retail brand equity specifics.

Chapter 2: Groceries online retail in Russia

The second chapter is focused on e-grocery market analysis based on the current reports, news articles and experts' opinions. It also studies two brands of e-grocery: Samokat and Yandex.Lavka.

Chapter 3: Evaluation of brand equity for online-retailer brands

The last chapter justifies the choice of the fundamental model for e-grocery brand equity measurement base, puts forward hypotheses and describes methods of empirical research, including the description of questionnaire and justification of obtained data. The last part is devoted to statistical analysis and hypothesis testing using exploratory factor analysis and confirmatory factor analysis with structural equations modelling. The last part discusses the obtained results, their theoretical contribution, managerial implications, and limitations.

CHAPTER 1. THEORETICAL BASIS OF BRAND EQUITY

1.1 Brand equity definition

First of all, it is necessary to define the term under the study. Brand equity is one of the fundamental concepts of branding. As Ailawadi and co-authors say, brand equity is a value premium that a company generates from a product with a recognizable name when compared to a generic equivalent. (Ailawadi et al, 2003) The similar definition was given by Shocker and Weitz (1988): *brand equity is a net present value of the incremental cash flows, which can be attributed to a brand name and company that owns that brand compared to identical product with no brand name or weak efforts of building the brand*. So, building a strong brand equity makes the firm's profit margins higher, their communication efforts more effective and their role in consumers' purchase intentions and preferences more valuable. (Keller, 1993)

This means that consumers tend to choose known brands over others even in the situations when the known ones may have a price premium. This arises from consumer's feelings, attachments, stereotypes and so on. For example, if a person, who doesn't know anything about smartphones decides to buy one, he or she would probably consider buying something like iPhone, Samsung or Xiaomi depending on the budget of the person. The other person, who needs to buy a new smartphone as a change for his/her broken iPhone, decides to buy another iPhone just because of the loyalty to the brand, even if this person knows that there are other good options in the market.

Ailawadi and co-authors state that measures of brand equity are usually being divided into three categories. The first category, which is called "customer mind-set" focuses on assessing the consumer-based sources of brand equity. It includes associations with brand, attitudes, attachments, awareness and so on. This category allows to qualitatively access the marketing success of the company by conducting various surveys. However, it is impossible to make this assessment money-valued, while financial valuation is necessary for fully described brand image. The second and third categories, which are called "product market outcomes" and "financial market outcomes" cover the shortcomings of the previous category as they focus on the outcomes or net benefit that a firm derives from its brand equity. The product market outcomes are usually being measured as price premium, but sometimes market share, relative price, constant term in demand models, share of category requirements, economic theory-based measure of the difference between the brand's profit and the profit it would earn without the brand name, or some others are being used for such purposes too. The financial market outcomes are usually being measured by discounted cash-flow valuation of licensing fees and royalties and by purchase price at the time a brand is sold or acquired, so this category valuates the as a financial asset. (Ailawadi et al, 2003)

Other authors like Aaker (2009) tie the definition of brand equity to a set of specific categories associated with the brand and its image (such as brand loyalty, awareness, and others). From this definition, the author develops a model, but it will be discussed further in the section

1.2. Nevertheless, in such cases the point of measuring brand equity remains the same and is connected to gaining competitive advantage, higher brand performance and other financial goals.

Essential to note that brand equity gives benefits not only to a firm owning a brand, but also to customers. Customers receive better brand perception and trust, which results in greater brand utility, decreased efforts of searching and thinking, lessened information costs and reduced perceived risk. As for the firm's benefits, besides stated increased added value, brand equity gives less risky market extension opportunities, including new markets, and facilitation of information asymmetry in other markets. (Shankar et al, 2008) In addition, recent research has found that firms with strong brand equity face lower systematic and idiosyncratic risk and higher stock returns in current COVID-19 crash relative to firms with weak brands. (Huang et al, 2021) Another possible benefit for a firm is reduced warranty claim costs and abnormal warranty accrual costs in a way that firm builds stronger relationships with customers, which results in possible market information extension for better warranty predictions and higher perception and understanding of the product by customers. (Cao, 2022)

So, in short, brand equity helps to improve the company's financial success by stimulating the customers to interact with a certain brand because of emotional attachment, associations, and other hardly measurable items. Therefore, it is necessary for a strong brand to build such relationships with their customers and somehow measure the impact of it. For such purposes the models of measuring the brand equity were created.

1.2 Models of brand equity

The most referenced authors on this field are Keller and Aaker, who developed the most famous models of measurement of the brand equity. Their models are applicable for goods-based and services-based businesses; however, some scholars argue with this statement, saying that those models are missing some service-related points such as brand consistency and perceived value, for example. (Sarker, et al, 2021). This will be seen from the paragraphs below, as those two models mostly affect the products, which are being delivered by the brands. Because of the need for more service-oriented models, some authors developed their own models of measuring the brand equity, which will be discussed in 1.2.3 part.

1.2.1 Keller's model

The oldest one is the Keller's model, which is also known as Customer-Based Brand Equity (CBBE) Model. The author himself identifies this model as "*the differential effect that brand knowledge has on customer response to brand marketing activity*". The main concept of it is the

fact that a brand should build a positive image about itself and state what the customers feel and think about it in order to become a strong brand. Being a strong brand means that customers would prefer to buy goods and services from this brand instead of other ones because of those customers' loyalty, perception and emotions dedicated to that strong brand, which is basically the brand equity. In order to develop such model Keller has formulated three key components: 1) differential effects created by a brand; 2) brand knowledge—defined very broadly as any type of mental brand association—as the source of the differential effects and 3) response to a wide variety of different marketing and other variables for the brand as the basis or outcomes of those differential effects. Also, to measure the CBBE the author highlighted two approaches: direct and indirect. The direct approach focuses on the measurement of the differential effect, which was created by the brand knowledge on consumers' response to various aspects of the brand's marketing activities. The indirect approach focuses on the sources of brand equity, which arise from the measurement of that brand knowledge. (Keller, 1993)

The subsequent articles from the same author added to that model some new concepts that broaden the knowledge about brand-consumer relationships and brand knowledge. One of them was the brand resonance model (see Figure 1). This model contains four levels of the brand equity: identity, meaning, response and relationships, which form a pyramid in the subsequent order. Identity answers the question "*Who are you and when and why do I think of you?*" and it is all about brand awareness. This is a basement of the brand knowledge. The meaning answers the question "*What are you and what makes you special?*" and it is about factors and special features that distinguish the brand from the rest in consumer's eyes. Response answers the question "*What do I think and feel about you?*" and it is about the reactions and emotions of consumers to the brand. Relationships answer the question "*What about you and me going forward?*" and they are about the consumers' loyalty and thoughts on the future interactions with the brand. It is necessary for a brand to go through all of the stated stages to build a strong and thoughtful image of itself in consumers' minds. (Keller, 2016)

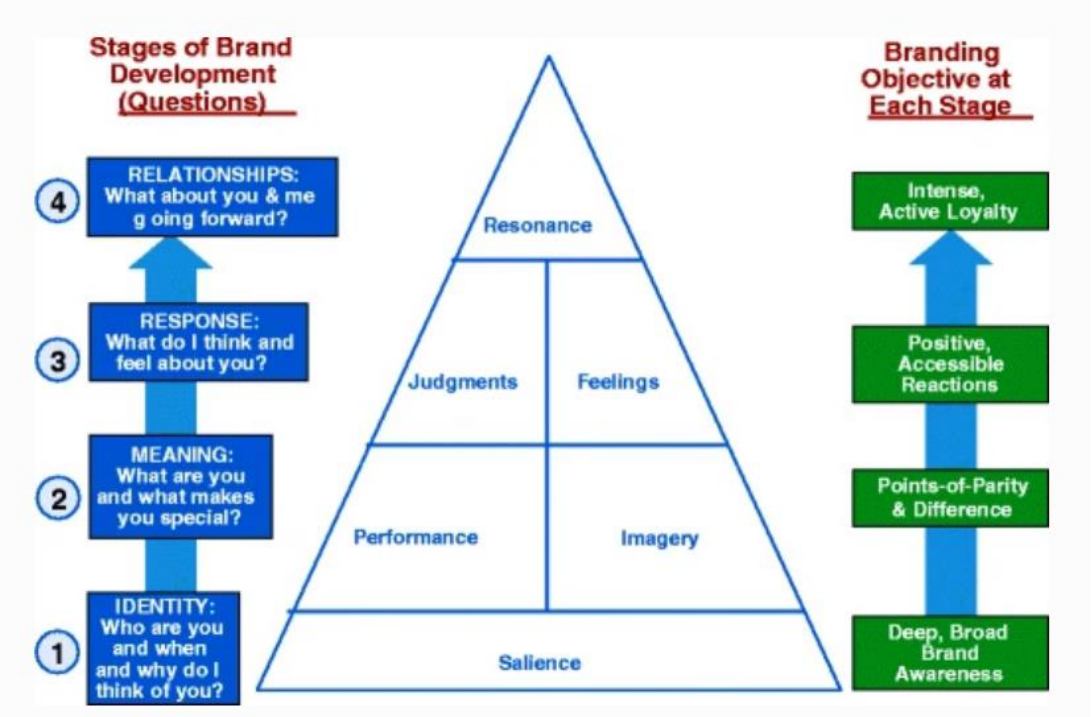

Figure 1: Resonance model[3]

Another important addition to the original CBBE Model is Brand Value Chain Model, which helps to understand and to build the right marketing activities to increase brand's financial performance. (see Figure 2) It starts with the marketing expenditures (basic level associated with the product development), which influence the customers' mindset (a picture of that product in consumers' minds, feelings towards it and interactions with it) and then it follows to the financial results and shareholders value, which are a final measurement of the success in monetary and asset value. Between those stages there are three multipliers, which connect and enhance each of them subsequently. Program quality is an impact of marketing program on consumers' feeling and emotions dedicated to the brand. Market conditions multiplier is a result of a certain brand image in consumers' minds, which was formed from the marketing activities. Investor sentiment comes from the brand's interior actions, since it defines the degree to which the value shown by the market characteristics of a brand is reflected in shareholder value.

In addition, it is worth to mention that there is research on measurement of brand equity of traditional retail companies, which was conducted through an implication of Keller's model. The findings of such research consisted of the fact that brand awareness and perceived quality are two main dimensions, which have the highest impact on retail brand equity. It also was stated that it is the same result as for other types of brands. (Jara & Cliquet, 2012)

[3] Keller, K. L. (2016). Reflections on customer-based brand equity: perspectives, progress, and priorities. AMS review, 6(1), 1-16.

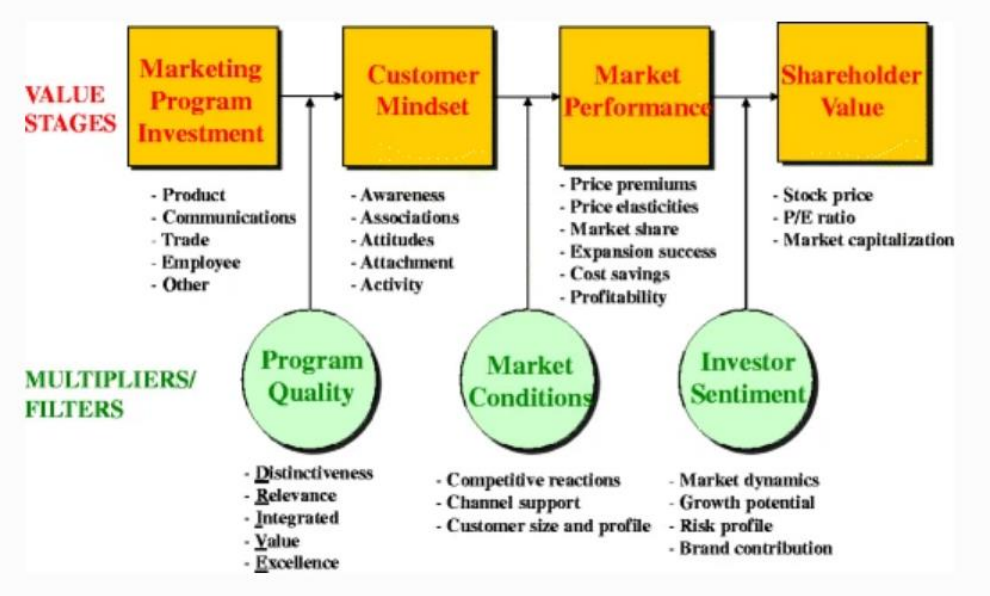

Figure 2: Brand Value Chain Model

1.2.2 Aaker's model

The second fundamental model, which allows to highlight the characteristic features of the brand, is Aaker's model of measuring brand equity. The author identifies brand equity as "*a set of categories of brand assets and liabilities linked to a brand, its name and its symbol*". Those assets and liabilities include 5 components: brand awareness, brand loyalty, perceived quality, brand associations and other proprietary assets. While brand awareness and brand loyalty were explained earlier, other concepts need to be clarified deeper. Perceived quality is all about the product itself: its price, quality, availability, and difference from the rest. It can be compared to the program quality multiplier from Keller's brand value chain model. Brand associations is a group of triggers, that brings certain images of a brand into consumer's mind. It is also about the speed of appearance of such associations, which is considered really important by the author. Other proprietary assets are patents, intellectual properties, and relations with trading partners. This component, for instance, protects a brand from competitors, who want to confuse consumers by the usage of similar name, symbols and so on. According to the author, all of those five components relate and can enhance each other. For example, brand loyalty can positively influence perceived quality, as the consumer beforehand trusts the brand, so its new product won't face that much of skepticism, or on the contrary high perceived quality increases brand loyalty. The more developed data a brand achieves for each of those levels the closer this brand becomes to achieving high brand equity. (Aaker, 2009) The visualized definition of brand equity by David A. Aaker is demonstrated in Figure 3.

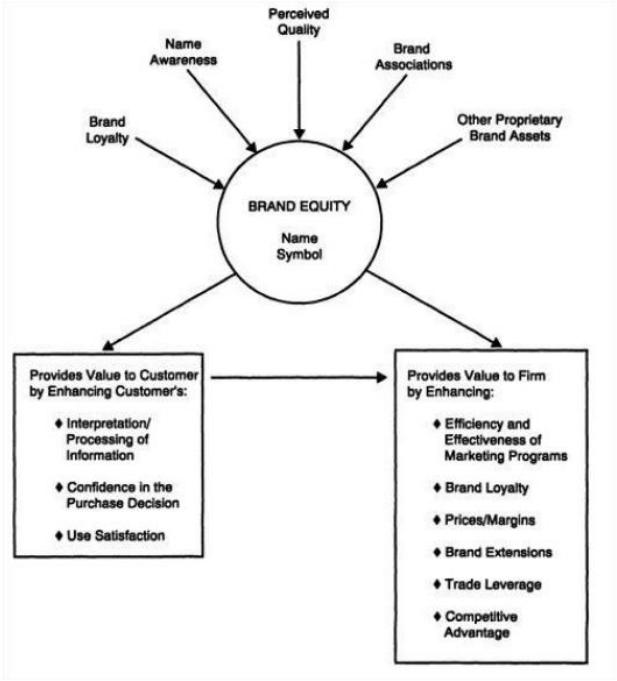

Figure 3: Brand Equity by David A. Aaker

The other important part of Aaker's model is that the author sees a brand identity as a combination of factors, which can be summed up in four categories. The first one is "Brand as a product". Characterization of brand identity as a product is carried out by defining the boundaries, qualities of the product, its properties, the scope of its use, consumers, and country of origin. The next group is "Brand as organization", which consists of organizational attributes, local activities and global activities. "Brand as a person" defines brand's personality and its relationships with customers. The last one is "Brand as symbol" is about using brand's characteristic visual images and metaphors, as well as the brand heritage. (Aaker, 2012)

All in all, the main difference between two fundamental brand equity models is that the Keller's model focuses mainly on customer's emotions, while the Aaker's model highlights the recognition as a key driver for effective brand equity.

1.2.3 Other models

In order to improve measurement of brand equity for various fields, some authors developed their own models mainly based on Keller's and Aaker's models. Çifci et al. highlighted two additional models in their research, which were Yoo & Donthu model and Nam et al. model. (Çifci, 2016) Yoo & Donthu created a *Multidimensional CBBE Scale*, which consists of perceived quality, brand loyalty and brand awareness/associations. This model was done after the testing of concepts from two fundamental models and extracting the most reliable dimensions from them. In

other words, the authors excluded the items, which had little correlation with brand equity. This model was designed to focus on individual consumer responses rather than overall perception. It was also based on the companies, which were selling goods. (Yoo & Donthu, 2001) The other model was created by sample-testing and the main outcome was defined by highlighting such components as staff behavior, physical quality, brand identification, ideal self-congruence, and lifestyle-congruence as the main positive drivers for the brand equity. The key observation was concentrated on consumer satisfaction and brand loyalty, which arise from the five components, mentioned before. This model was made because of the demand for a new model, which could be applicable not only for goods selling, but for service-companies, too. (Nam et al, 2011)

Another important model is *Identity Brand Prism* made by Jean-Noel Kapferer. This model serves to visualize how a brand is expressed through specific aspects. The author identified six aspects that he considered the most important for building a strong brand. The first aspect is physique, which is expressed in the fact that the consumer needs to visually perceive the brand. Such visual markers can be a logo, color palette, iconography, and others. Kapferer considers this aspect to be fundamental and the simplest, since it is with the help of it that it is easier for the consumer to remember the brand. The second aspect is brand personality. This is how a brand communicates with the world and with consumers, what tone and font it uses. Brand personality is the human characteristic of a brand that a brand must incorporate into every aspect of its business. The third aspect is brand culture. It tells about the origin of the brand, its values and ideals, as well as what goals it sets for itself and how it motivates. The fourth aspect is relationships. As with the Keller model, this point describes the brand's relationship with its customers. The fifth point is reflection. The reflection of the brand speaks about how the brand sees its stereotypical buyer, what characteristics he or she possesses. The last aspect is self-esteem. This is how the buyer sees himself when using the services or products of the brand. The brand helps the customer achieve this ideal through interaction. All of those factors form a prism, which helps a brand to build a strong image in consumers' minds to develop its brand equity successfully. (Kapferer, 2007)

1.3 Online retail brand equity

With the aim of specification of the research the online companies have been chosen, it is necessary to explore their specifics.

First, the definition of online retail companies should be stated. Retail itself is an entity, which is engaged reselling merchandise, normally without any transformation and rendering services related to the sale of this merchandise. Therefore, it is selling new or used goods without

changes for personal, household, or other use. (Hortaçsu & Syverson, 2015) Online retail is the same thing, but the sale itself is being made by the internet. Some of the online retail companies may even not have any physical stores, using only warehouses and shipping services. The online retail can be in a format of business-to-business or business-to-consumer[4], but in this study the only type of e-commerce brands will be the B2C ones.

The delivery of goods can be organized in various ways. The first one is platform retailing, which arises from the agreement between a platform and a selling company. The first one displays the goods of the second company on its website or in the application and assumes delivery obligations. The second company pays this platform a fee for the services provided. Together, they can agree on marketing promotion using this platform, discounts and promotions, and product prices. This method is especially convenient for small companies and individual entrepreneurs. The second option is single-channel retailing. This concept is simple: a company uses only one channel of distribution: an online store or a physical store (in a traditional retail). The other option is omnichannel retail, which implies the optimized use of a large number of sales channels: apps, websites, platforms, brick-and-mortars and so on. This option is commonly used nowadays since it delivers better satisfaction of the consumers, as they have various options to choose from. (He et al., 2021)

After the familiarity with the term, it is necessary to move on to the brand equity. Brand equity goes hand in hand with customer satisfaction and brand image, so in the conditions limited knowledge on brand equity of online retailers, this research will take into the consideration related concepts. In the article on customers satisfaction Kumar and Ayodeji (2020) elaborate on the factors, which affect e-commerce customers the most. They use the customer activation model, which adopts the three qualities (information quality, system quality, use and service quality) and their effects on customer satisfaction. The first component of this model is Purchase/repurchase intention, and it is about the customer intentions on purchasing or continuing to purchase goods from a company. The second component is user satisfaction, which is a consumer's feeling of satisfaction from interacting with a brand. The third component is a net benefit that a consumer receives from choosing to shop online instead of going to an actual store (sales, time, efforts, road to that store). The next component is information quality. It can be characterized as customers' perception of the presentation and characteristics of information presented on a company's website, app, or portal. Another component is a system quality, which is a perception of consumers of e-retailer's ability to successfully provide the requested information. Service quality is the same thing, but about the services and goods that the company delivers. And the last component is trust.

[4] Investopedia: Electronic Retailing (E-tailing). URL: https://www.investopedia.com/terms/e/electronic-retailing-e-tailing.asp

Trust in a company is very important in general, but in the case of online companies, trust becomes even more important. First of all, the consumer should know that the transaction will be fair, because the company may turn out to be fraudulent. It is also important for the consumer to know in advance that the brand will provide a quality product after payment is made, since otherwise they will have to issue a return or be left with a low-quality product in their hands. (Kumar & Ayodeji, 2020)

Another important research paper for online retailers' brand equity observes whether the traditional dimensions of customer-based brand equity models are applicable for online companies. The researchers develop their own new scale, which consists of 4 dimensions: Loyalty, Trust, Perceived Value and Awareness, which all interconnect with each other and form a CBBE for online companies. Findings include that Perceived Value and Loyalty have significant direct influence on brand equity, while Trust and Awareness does not. However, two last dimensions have a strong indirect effect on Brand Equity through other elements. (Rios & Riquelme, 2008)

CHAPTER 2: GROCERIES ONLINE RETAIL IN RUSSIA

2.1 Groceries online retail market overview

Digitalization affects so many areas of people's lives, and the usual purchase of food is no exception. In the 2010s, the first services for the delivery of daily demand goods from supermarkets began to appear, which eventually grew into the birth of express delivery with various business models.

2.1.1 Features of consumer behavior

Consumer behavior is different in online and offline due to the various reasons, arising from the distant format of online purchases. One of the main customer concerns is the inability to physically assess the product quality. Consumers are deprived of touching, smelling and viewing products, which decrease the level of trust and possibility to convince to buy unexpectedly.[5]

In 2020, internet customers were less trusting of and interested in products having a short shelf life. If dairy goods had the highest part of the traditional basket and baby food had the least, baby food was in first place online. However, the pattern is shifting, with dairy products leading the way in terms of online growth, followed by culinary, confectionary, and snacks. The decrease

[5] Online food retail: new challenges and opportunities, E-PEPPER, URL: https://e-pepper.ru/news/onlayn-torgovlya-produktami-pitaniya-novye-vyzovy-i-vozmozhnosti.html

in the average check, combined with an increase in the frequency of orders, implicitly reflects consumers' rising trust in online perishable goods shopping.(5)

Furthermore, online shopping has a distinct demographic from offline shopping. People aged 25 to 34 make the majority of food purchases. The personalisation of e-commerce services, on the other hand, has a tendency to raise the average age of online service users. At the same time, pricing remains the most important determinant in consumer preferences, particularly online. As a result, the manufacturer's ability to compete on "first price" takes on a new significance.(5)

Another trend in e-grocery is decreasing average sum of spending. It is expected that the indicator will be 15% less than 2020 ones. (DataInsight, 2022) The main explanation for this is the rising popularity of express delivery services instead of online hypermarkets. Customers tend to move away from buying big amounts of products for future, preferring to restock as needed with small orders.

The growing popularity of mindful consumption is one of the long-term trends. The demand for natural and organic products will increase, but a more balanced approach to spending on everyday goods is gradually emerging, which will affect the content of the basket more than the size of the average check. This will almost certainly force retailers to develop new recommender systems. According to research, consumers are becoming more interested in brand compliance with sustainability goals, which becomes an argument in the battle for consumer loyalty. (RBC, 2021)

Another significant trend in e-grocery consumer behavior is a major decrease in brand loyalty. The saturation of the market with fast and convenient delivery services has resulted in consumers taking express delivery and a diverse range of products for granted. As a result, they are more likely to abandon services that cannot meet the buyer's request, since there is always a more convenient alternative. (RBC, 2021) This is also supported by the words of the O'KEY's director of e-commerce, who claims that for most consumers, the best price is more important than brand loyalty at the moment, and online monitoring of competitors' prices is much easier.[6]

2.1.2 Main competitors

The field of online delivery of daily demand products in Russia is filled with a lot of players that can be divided into 4 conditional categories: express delivery services with their own warehouses, marketplaces, own delivery of offline supermarkets, third-party delivery services from offline supermarkets. All of them use different business models and serve different needs of

[6] How has the E-grocery segment changed in five years? O'KEY hypermarket experience, Reksoft, URL: https://www.reksoft.ru/blog/2021/01/20/e-grocery-okey/

consumers: someone needs a purchase in advance and a delivery time of several days, someone needs urgent delivery in 15-30 minutes, and someone needs a large amount of products today.

The first category – delivery services with their own warehouses – is the main business model under this study. The biggest players among such are Samokat and Yandex.Lavka, which both have very similar business models. These 2 services will be discussed in detail in section 2.3, but the main difference from other services lies in absence of physical stores and purchasing through apps or websites. Instead of physical stores or regular warehouses, they use darkstores. Darkstore is a warehouse for online stores where products are located by analogy with physical stores, but buyers do not enter there, only employees picking orders and couriers are in them. This format allows to complete orders in the shortest possible time.[7] There is also a similar service with darkstores, but the delivery is hour-long with bigger assortment, which is online hypermarket. The example of such service is Utkonos.

Next category is marketplaces, which are online platforms, where sellers through third parties can sell their products and services. Almost anything can be sold on such platforms, and everyday goods are no exception. Firstly, these are individual sellers who themselves put groceries on online showcases, and secondly, these are sometimes specialized services of the marketplaces themselves, such as Ozon Fresh, which focus on grocery delivery. The biggest players here are Wildberries, Ozon, Yandex.Market and SberMegaMarket.[8] Usually their delivery time is the next day or couple of days, but there are faster options with hour-long delivery (Ozon Fresh[9], Yandex.Market[10])

One of the earliest forms of e-grocery were services of delivery from physical stores by third-party companies. The first of them was iGooods, which is still a popular service. Another big player is SberMarket. Both these services receive orders through apps or websites, then their employees or "pickers" collect orders in chosen supermarkets and transfer the orders to couriers, which deliver them to the stated addresses. Usually, the time of delivery is one hour, and the minimum sum of order depends on the region, but the most common is around 1000 rubles, which is much bigger than for express deliveries.

Another competitors in e-grocery are physical stores' own services of delivery. Big FMCG players considered online sales as a crucial field for business development, so they launched their own delivery services based on the experience on partnerships with third-party services of

[7] "What is darkstore. Explaining in simple terms", SecretMag, URL: https://secretmag.ru/slova/chto-takoe-darkstor-obyasnyaem-prostymi-slovami.htm
[8] Marketplaces 2022, inSales, URL: https://www.insales.ru/blogs/university/top-rating-marketpleysov
[9] Ozon Fresh, URL: https://www.ozon.ru/category/supermarket-25000/?miniapp=supermarket
[10] Yandex.Market launched express delivery of goods in 1-2 hours in Moscow, vc.ru, https://vc.ru/trade/226889-yandeks-market-zapustil-ekspress-dostavku-tovarov-za-1-2-chasa-v-moskve

delivery. Such services operate through apps and websites. The biggest players there are the following: Perekrestok (Perekrestok and Perekrestok.Vprok), O'KEY (O'KEY Dostavka), Lenta (Lentochka or O'Lenta). Another possible player here is Vkusvill, which is not a huge supermarket like others, but still is a popular option, which delivers only products under the own trademark. All of them usually deliver orders in one or two hours, but there is also an option for pickup from a physical store.

Regarding the distribution of orders between the competitors, based on the 2021 report, the 1st place takes SberMarket, which might be a result of sales of various products besides groceries and broadened coverage localization. The second biggest e-grocery retailer is Vkusvill. Samokat and Yandex.Lavka follow the range consequently. The top 4 companies cover approximately 50% of overall volume. Other services have significantly lower sales, which can be seen from Figure 4. (DataInsight, 2021)

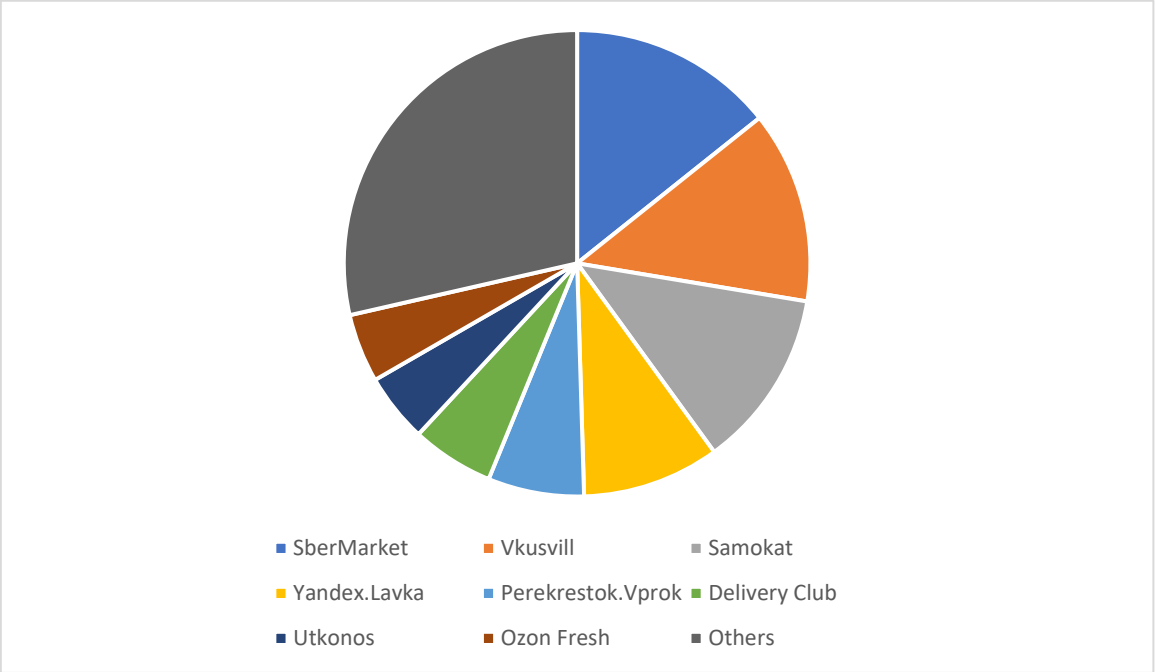

Figure 4. Online sales leaders (retrieved from DataInsight)

The growth of e-grocery continues through years, resulting in 3.3 times increase in 2021 compared to 2020. (DataInsight, 2021) The prediction for 2022 is 2.1 times compared to 2021, meaning 703 billion rubles overall. Such incline is partially explained by expanding the geography of food delivery services at home.[11]

However, the owners of Samokat consider physical stores near the consumer's apartment as the main competitors for services of express delivery. They both have rather small assortment

[11] The e-Grocery market in Russia will double in 2022, Retail Loyalty, URL: https://retail-loyalty.org/news/rynok-e-grocery-v-rossii-v-2022-godu-vyrastet-v-2-raza/

and people go to such stores or purchase through such services, when they need something for couple of days and right now, they usually don't buy products there for future like they do in hypermarkets.[12] Physical stores have such benefits as in-store experience, physical inspection of quality of products, live communication with employees and so on, which might be important for certain categories of consumers, while e-retailers can't offer such. Therefore, when speaking about the competition on the e-grocery field, it is necessary to consider offline stores too.

2.2 Peculiarities of the online retail brand "Samokat"

Samokat (rus. "Самокат") appeared in 2018 as a Russian express food delivery service from its own warehouses. Delivery times vary from 15 to 30 minutes, depending on the address of the order. At first, delivery was very local, carried out only to certain houses, but over time it grew to cover the entire cities of Russia.[13] At the moment, the company has opened more than 700 warehouses in 49 cities of Russia, and the number of orders is approximately equal to 7 million per month.[14] The company is 75.6% owned by a joint venture between Sberbank and VKontakte, so the service is integrated into their ecosystems, the rest of the rights belong to the original creators - Vyacheslav Bocharov and Rodion Shishkov.[15]

The main difference between Samokat and its predecessors lies in the business model. Firstly, making purchases at Samokat is possible only through a mobile app. The company has its own website, but it contains only information about the service, contacts, vacancies, and so on, as well as a large QR code for downloading the app. Secondly, the company does not have physical stores. The Samokat only works with its own darkstores. Orders are collected in darkstores, and then couriers on foot or on a bicycle deliver orders to the right address within a set time.[16]

In addition to darkstores, Scooter also has its own hubs that allow you to store a much larger range of products. Delivery from hubs is carried out a little differently: it is no longer express delivery within half an hour, it is delivery from an hour or by a certain time. In both cases, delivery is free, and the minimum order amount varies depending on the workload of the service, weather conditions and other variables that the automated system operates on. Also, artificial intelligence

[12] "If people live in the city, Samokat is ready to enter it", Vedomosti, URL: https://www.vedomosti.ru/business/characters/2021/10/20/892231-samokat-gotov

[13] "Samokat for 700 million: how a military man and an economist came up with the idea of delivering products in 15 minutes and ahead of Yandex", Forbes, URL: https://www.forbes.ru/karera-i-svoy-biznes/393469-samokat-za-700-millionov-kak-voennyy-i-ekonomist-pridumali-dostavlyat

[14] "Samokat is ahead of Western competitors in the number of darkstores", Forbes, URL: https://www.forbes.ru/newsroom/biznes/437911-samokat-operedil-zapadnyh-konkurentov-po-chislu-darkstorov

[15] Who owns the delivery service Samokat, SamokatMoskva, URL: https://samokatmoskva.ru/komu-prinadlezhit-servis-dostavki/

[16] Samokat, URL: https://samokat.ru/

predicts consumer behavior, monitors the expiration dates of products in stock, and calls additional couriers using push notifications.[17]

With regard to the range of goods, up to 2500 SKUs are presented in the darkstores of the Scooter, including goods under its own brand. According to co-founder of "Samokat" Vyacheslav Bocharov, up to half of sales at the moment are accounted for by goods under their own brand. Such indicators were achieved by the strategy of not copying the goods of more famous brands at a lower price, but by developing their own products that meet the needs of consumers.[18]

Moreover, it is important to highlight that brand symbols are an important element. Couriers dressed in pink uniforms with pink thermal bags are iconic associations with the Samokat. Also, the mobile app interface is made in the same color scheme. In addition, the Scooter has a logo (see Figure 1).

Figure 5. Samokat's logo[19]

2.3 Peculiarities of the online retail brand "Yandex.Lavka"

The other huge player on the field of e-grocery is Yandex.Lavka (rus. «Яндекс.Лавка), which is also a Russian express delivery service of groceries. In 2018 Samokat's owners did negotiations with Yandex about investments in Samokat, but the deal. After that, Yandex.Lavka appeared as a competitor. [20]

Yandex.Lavka has basically the same business model as Samokat. They operate through couriers and darkstores, orders are collected through the app. However, there are some differences. First, Yandex itself is a huge eco-system with numerous services: search engine, marketplace, music streaming, taxi, food delivery from restaurants. Two last services became the base of the Yandex.Lavka, since this service hadn't had its own app and was initially integrated into two Yandex's food-tech services. In 2020 Yandex.Lavka became a separate app, but users still can order from Yandex.Taxi and Yandex.Eda.[21] Second, since 2021 there is an option to order from a

[17] "Samokat: how does the express delivery service work?", Retail.ru, URL: https://www.retail.ru/photoreports/samokat-kak-rabotaet-servis-ekspress-dostavki/
[18] "If people live in the city, Samokat is ready to enter it", Vedomosti, URL: https://www.vedomosti.ru/business/characters/2021/10/20/892231-samokat-gotov
[19] Samokat, URL: https://samokat.ru/
[20] "Samokat: Express food delivery service that appeared before Yandex.Lavka", The Village, URL: https://www.the-village.ru/business/businessmen/385151-samokat
[21] "Order and eat. Yandex.Lavka launched a mobile app", Fontanka, URL: https://www.fontanka.ru/longreads/69336628/

website. The director of Yandex.Lavka explains that it's more convenient for people, who work on their desktops and the amount of such orders reached 45%.[22] Therefore, Yandex.Lavka provides more options to make a purchase. The third difference is that while delivery from Samokat is free, Yandex.Lavka has fees for it. They vary from region to region and the cost is identified by an artificial intelligence. Also, as in Samokat, AI optimizes operational processes from the online purchase to delivery of it.

Similarly to Samokat, Yandex.Lavka provides approximately 2500 SKU's per darkstore, 180 of which are goods under own brand. The strategy is also making products, considering consumers' preferences, which results in 80% of purchases in some categories.[23]

Regarding the brand symbols, Yandex.Lavka has its recognizable logo (see Figure 2), yellow and turquoise colors as corporate and couriers on bicycles in uniforms with stated colors. Important to note that Yandex.Lavka has an advantage in the field of brand associations, since Yandex itself has a strong brand image. Therefore, the pool of associations becomes bigger: yellow colors and corporate font, logos of other Yandex's services can be added to Lavka's memorable symbols too.

Figure 6. Yandex.Lavka's logo[24]

CHAPTER 3: EVALUATION OF BRAND EQUITY FOR E-GROCERY ONLINE-RETAILER BRANDS

3.1. Proposed model: justification and hypothesis

This study is focused on consumer perspective on assessment of brand equity, so initially the field of choice is limited by this factor. Derived from the current literature, it seems most appropriate to use the Aaker model to base on a customer-based brand equity model for an online retailer of groceries. This choice is primarily justified by the presence of brand loyalty in the model,

[22] "Yandex.Lavka launched a desktop version of the store", VC.ru, URL: https://vc.ru/services/281127-yandeks-lavka-zapustila-desktopnuyu-versiyu-magazina

[23] "How an IT company makes products: the story of its own trademark Yandex.Lavka", VC.ru, URL: https://vc.ru/yandex.go/295950-kak-it-kompaniya-delaet-produkty-istoriya-sobstvennoy-torgovoy-marki-yandeks-lavki

[24] Yandex.Lavka, URL: https://lavka.yandex/

which is presumably an important aspect for evaluation in this case. In addition, the model is one of the fundamental for this topic and has been proven over the years.

3.1.1. Hypotheses formulation

Since the Aaker's model was chosen to be the basis of this study, it is essential to tie hypotheses and the overall research to concepts from his model. For these purposes hypotheses were derived from 4 elements of model: Brand Loyalty, Brand Awareness, Brand Associations and Perceived Quality. Other proprietary assets don't seem to be measurable in case of e-grocery retail brand from customer perspective, so this element wasn't used.

First, this study is aimed to introduce a new model of measuring Customer-Based Brand Equity from the Aaker's model as a base. Therefore, first group hypotheses explore which dimensions are expected to appear in the CBBE model for e-grocery.

Brand Awareness is considered to be an essential dimension of brand equity by authors of fundamental works on customer-based brand equity (Keller, 1993; Aaker, 2012). The newer papers confirm that awareness is a part of the new developed models for various industries (Rios & Riquelme, 2008; Alhaddad, 2015; Nguyen, 2022). Hence, this should be validated for brand equity of e-grocery retailers.

H1: *Brand Awareness is one of the dimensions of CBBE model for e-grocery*.

Brand Loyalty is also one of the main components of the brand equity, which was derived by Aaker (2008). Even though some authors identify brand loyalty as one of the dimensions of brand equity, there is reverse evidence that brand equity might have direct and positive influence on brand loyalty in some cases. (Thanushan & Kennedy, 2020) In current study brand loyalty is decided to be tested as one of the factors that form the brand equity, since the main framework here is Aaker's.

H2: *Brand Loyalty is one of the dimensions of CBBE model for e-grocery.*

Brand Associations is the dimension that many authors derived, including the fundamental ones (Aaker, 2009; Keller, 1993), therefore it is expected to identify such dimension through the further analysis.

H3: *Brand Associations is one of the dimensions of CBBE model for e-grocery.*

Even though Aaker uses a term Perceived Quality, this study will use a slightly different wording, since, based on the corresponding literature, it seems to be more applicable for online companies. Perceived Value is a is the customers' evaluation of the qualities of a given product or service, its abilities to meet customer's needs and expectations, especially in comparison with its peers. (Hernando, & Campo, 2017) It was identified as a dimension through studying the CBBE

modeling in the context of online companies (Rios & Riquelme, 2008), hence the hypothesis is the following:

H4: *Perceived Value is one of the dimensions of CBBE model for e-grocery.*

The second section of hypotheses measures how dimensions of the new CBBE model influence each other. As it was said earlier, Brand Loyalty is often seen as one of the main dimensions, from which other dimensions indirectly influence brand equity. Aaker himself mentioned that dimensions in the model might affect Brand Loyalty. (Aaker, 1991) Therefore, the future CBBE model for e-grocery will observe the influence of each element on Loyalty.

The results of the study that was recently conducted report that Brand Associations and Brand Awareness both have significant influence on Loyalty in the context of online retail industry. (Phong et al., 2020) Moreover, the research regarded to the footwear brand finds a link between improving Brand Loyalty by increasing the Associations dimension. (Pradnyaputra & Chaerudin, 2016). Hence 2 hypotheses are derived:

H5: *Brand Awareness positively and directly influences Brand Loyalty.*

H6: *Brand Associations positively and directly influences Brand Loyalty.*

There are numerous articles observing the relationships between perceived value and brand loyalty in traditional brands, detecting that perceived value positively influences loyalty. (Cronin et al., 2000) Regarding the retail case, such links were found there too. (Nikhashemi et al., 2016) The online companies' brand loyalty was also found to be affected by perceived value. (Rios & Riquelme, 2008) Other papers propose that if a company wants to gain loyalty and trust from their customers, they firstly need to create relationships with those customers and offer them some value. (Pitta et al., 2006) Therefore, the influence of perceived value should be tested in case of e-grocery, validating the following hypothesis:

H7: *Perceived Value positively and directly influences Brand Loyalty.*

The third group of hypotheses explores which items have the highest influence on dimensions.

The relationship between brand loyalty and trust was explored by several studies, detecting that trust has a direct and positive influence on loyalty (Lau & Lee, 1999; Shin et al., 2019; Atulkar, 2020). In the field of online businesses, trust was found to be even more essential in gaining brand loyalty, since customers have no possibility to assess the quality of products physically or have in-store experience. (Chiou & Droge, 2006) Therefore, this study supposes that trust might be the most important item in brand loyalty.

H8: *Trust has the highest positive and direct influence on Brand Loyalty.*

Rios & Riquelme (2008) report that Perceived Value dimension has a price satisfaction as one of the items. Also, the results of the recent research report that there is a link between perceived

value dimension and satisfaction with the price. (Demirgüneş, 2015) Another research studies the Perceived Value as a concept and identifies pricing as one of the dimensions affecting the Perceived Value of online services. (Gamage & Ahsan, 2013) Hence, the following hypothesis is derived:

H9: *Price satisfaction has the highest positive and direct influence on Perceived Value.*

3.1.2. Questionnaire design

In order to validate stated hypotheses, it was decided to conduct a survey in a form of online questionnaire. The questionnaire is created for usual consumers since the customer-based approach is being used in modeling. The online-only format is justified by the fact that "Samokat" and "Yandex.Lavka" operate only as an online app, so people, who don't know how to use devices are not the relevant segment anyway.

The questionnaire consists of five sections each of which can't be seen beforehand. The first section involves only one question, which is open, about e-grocery retailers that respondents can remember, and the title of the questionnaire does not have the name of the researched retailer, so that respondents' memories won't be affected by brand listing. The second section has couple of multiple-choice questions asking about familiar e-grocery brands and has one filter question to weed out respondents who do not know "Samokat". One option from the filter question leads to the 3rd section with questions for customers of "Samokat", which reveal their average spending, frequency of purchases and relationships with the brand: associations, memories, satisfaction of the service, etc. The second option leads to the 4th section, which is for non-customers, but people with the experience of interaction with brand's app. It has almost the same question for relationships with the brand, but with corrections for non-customers, and instead of purchase-related questions asks about reasons why those people didn't shop at "Samokat". Also, to make the questionnaire more convenient, attitude-related questions were connected into one matrix-like question. The last option leads to the 5th section, which is just demographics. This section also follows up the 3rd and 4th sections.

Two sections of the questionnaire involve questions about customers' attitudes towards the brand. Likert scale was chosen to be used in such questions. However, 5-point scale is simpler to understand for respondents then 7-point scale, therefore the Likert scale was shortened into 5 options:

1 – Strongly disagree

2 – Somewhat disagree

3 – Not sure

4 – Rather agree

5 – Strongly agree

Matrix-like question from the survey is closely tied down to Aaker's model. In detail, parts about recognition of brand symbols,

Brand Awareness:

I easily recognize this brand among others

This brand comes to my mind when mentioning grocery delivery

I like the Brand app

I have no problems using the Brand app

Making an order and paying for it in the Brand app is very easy

Brand Associations:

I can easily describe the symbolism (logo) of this brand

When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)

Brand Loyalty:

I like this brand

I trust this brand

I prefer this brand to others

I often prefer ordering grocery delivery from Brand to going to a physical store

I would recommend Brand to my family and friends

Perceived Value:

I like the quality of the goods presented in the Brand

The Brand offers a wide range of products

Brand offers unique products

I often order products under Brand's own brand

I am satisfied with the prices in this store

I like the promotions in this store

I like Brand's delivery

Brand couriers are always polite and do their job efficiently

Brand support staff always listen to me and try to help

If there are problems, Brand support solves them and compensates me for the losses

The Brand makes every effort to ensure that the customer is satisfied

Later, in order to reduce the impact of the brand on the study, a similar survey was added for Yandex.Lavka. The questions are duplicated from the Samokat survey, however sections 1 and 2 have been removed as they are not brand specific and will be analyzed separately. Thus, section 1 consists of a filter question about the experience of interacting with the service, section 2 contains questions for users of Yandex.Lavka, section 3 is intended for people who have an idea about the application, but have not made purchases, and section 4 collects demographic data of respondents.

3.2. Methodology

3.2.1. Sample description and information gathering

After the data collection, it is important to clean the data. First, the missing values should be detected. Since all of the questions in the survey were marked as obligatory, there are no missing values. Second, the outliers should be found. Both questionnaires have no open questions and most of them are Likert-scaled or have 5-6 options to choose from, so there are no extreme values. However, the unengaged respondents might appear through such surveys. In order to detect them, the standard deviation was calculated for each respondent. Through the analysis 0 unengaged respondents were indicated in Yandex's survey, while for Samokat there were 3 of them, so those observations were excluded from the data set, decreasing the sample for Samokat from 232 to 229.

Preliminary results of the survey show that out of 229 respondents 171 have made purchases in "Samokat", 47 are familiar with the app, while 11 people didn't interact with the brand, so the last category of people should be eliminated from the analysis, therefore for now there are 218 relevant answers.

The demographic summary of the questionnaire is the following:

Characteristic	The biggest category
Gender	Female – **69.4%**
Age	18-24 – **59%**
Level of education	Graduate – **75,1%**
Financial situation of the family	We can buy basic household appliances, but we don't have enough for a car – **41%**

Regarding the preliminary analysis of consumers who did not shop at Samokat, the most common reasons for not using the service are the lack of need for use (69.2%), the preference for self-assessment of the quality of products before purchase (41%), and dissatisfaction with prices at Samokat (12.8%).

For Yandex.Lavka there were collected 60 responses, from which 43 people made purchases from the service, 16 didn't, but are familiar with the service, and 1 doesn't know about it at all.

The demographic summary is the following:

Characteristic	The biggest category
Gender	Female – **63.3%**
Age	18-24 – **83.3%**
Level of education	Graduate – **80%**
Financial situation of the family	We have enough money for food and clothes, but it will be difficult for us to buy a TV, a refrigerator, or a washing machine– **38,3%**

Regarding the preliminary analysis of consumers who did not shop at Yandex.Lavka, the most common reasons for not using the service are the lack of need for use (68.8%), the preference for self-assessment of the quality of products before purchase (50%), and dissatisfaction with prices at Samokat (18.8%), so this result is almost the same as for Samokat.

All in all, the data for two brands is similar with minor changes. Therefore, both data bases will be used together in further analysis as one. The two surveys were conducted separately, but through same channels, so the respondents in them overlap. Hence, it is irrelevant to aggregate the demographic information in one database. However, other parts of the surveys can be used together since they refer to two different brands.

As a result, a database with 289 observations can be used for factor analysis, but only 214 of them will be actually used, since the needed condition for it is making purchases in Samokat or Yandex.Lavka. The important note is that Yandex.Lavka data is less than Samokat's one, so there may be an influence of Samokat's brand on the results.

3.3. Results of the proposed model and test of hypotheses

3.3.1. Exploratory Factor Analysis

23 variables from the questionnaires were identified. Those are 23 items from the matrix-like question with the 5-point scale. In order to shorten the list of variables and to identify elements of the future model the exploratory factor analysis is being done.

Next check for adequacy of usage of the data in factor analysis is Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO is close to 1 and the test of sphericity is less than 0.05, so the data is suitable for the factor analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,923
Bartlett's Test of Sphericity	Approx. Chi-Square	3674,670
	df	253
	Sig.	,000

Table 1. KMO and Barlett's Test, 1st rotation

For this study the Maximum Likelyhood was used as an extraction method, as it is will be used further during the CFA. After using such, the communalities need to be checked in order to identify if the variables are suitable for further usage. Communalities show the extent to which variables correlate with other ones, so low communalities variables have a risk to have problems when loading to the factors. For this reason, the communalities under 0.3 are identified and become potential candidates for being removed after further examining of the factor pattern matrix. In this case almost all of the variables exceed 0.3 communalities, while *I can easily describe the symbolism (logo) of this brand* is below that value, so needs extra attention further.

Communalities

	Initial	Extraction
I prefer this brand to others	,669	,605
I trust this brand	,856	,882
I like this brand	,862	,891
I would recommend Brand to my family and friends	,821	,878
I like Brand's delivery	,753	,756
I often prefer ordering grocery delivery from Brand to going to a physical store	,354	,302
I have no problems using the Brand app	,703	,630
Making an order and paying for it in the Brand app is very easy	,749	,839
I like the Brand app	,689	,638
If there are problems, Brand support solves them and compensates me for the losses	,776	,841
Brand support staff always listen to me and try to help	,786	,851
The Brand makes every effort to ensure that the customer is satisfied	,785	,783
I am satisfied with the prices in this store	,528	,629
I like the promotions in this store	,451	,548
Brand offers unique products	,495	,383
I easily recognize this brand among others	,555	,523
I can easily describe the symbolism (logo) of this brand	,362	,233
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	,563	,570
This brand comes to my mind when mentioning grocery delivery	,588	,529
I like the quality of the goods presented in the Brand	,673	,621
The Brand offers a wide range of products	,498	,388
I often order products under Brand's own brand	,489	,411
Brand couriers are always polite and do their job efficiently	,663	,641

Extraction Method: Maximum Likelihood.

Table 2. Communalities, 1st rotation

The next step is checking whether the overall explained variance exceeds 60%. The full version of the total variance explained can be found in the appendix, while the shortened version of it is presented below. It shows that the cumulative % of variance explained by 5 extracted factors equals to 62.485%, which is above the 60%.

Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %
4,372	19,008	19,008
4,102	17,834	36,842
2,765	12,021	48,862
2,550	11,088	59,950
,583	2,534	62,485

Table 3. Brief Total Variance Explained, 1st rotation

The rotation method used is Varimax since it's the most commonly used. The rotated factor matrix below shows that the EFA identified 5 factors. Some of the variables have factor loadings less than 0.5, so they should be excluded. Also, there are variables with factor loadings close to 0.5 with high values regarding other factors, which create overloadings, therefore they should be excluded too. Those variables are:

1. *I often prefer ordering grocery delivery from Brand to going to a physical store*
2. *Brand couriers are always polite and do their job efficiently*
3. *I can easily describe the symbolism (logo) of this brand*
4. *The Brand makes every effort to ensure that the customer is satisfied*
5. *I often order products under Brand's own brand*
6. *I often order products under Brand's own brand*
7. *I like the quality of the goods presented in the Brand*

Rotated Factor Matrix[a]

	Factor				
	1	2	3	4	5
I trust this brand	,762	,341			
I like this brand	,760	,315		,364	
I would recommend Brand to my family and friends	,748	,397			
I prefer this brand to others	,685				
I like Brand's delivery	,639	,496			
I like the quality of the goods presented in the Brand	,551	,373			
I often prefer ordering grocery delivery from Brand to going to a physical store	,402				
Making an order and paying for it in the Brand app is very easy		,853			
I have no problems using the Brand app	,307	,688			
I easily recognize this brand among others		,612			
I like the Brand app	,375	,600		,348	
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)		,582			,301
This brand comes to my mind when mentioning grocery delivery	,331	,560			
Brand couriers are always polite and do their job efficiently	,382	,508	,438		
I can easily describe the symbolism (logo) of this brand					
Brand support staff always listen to me and try to help			,853		
If there are problems, Brand support solves them and compensates me for the losses			,850		
The Brand makes every effort to ensure that the customer is satisfied	,517	,332	,594		
I am satisfied with the prices in this store				,752	
I like the promotions in this store				,679	
The Brand offers a wide range of products				,504	
I often order products under Brand's own brand	,375			,436	
Brand offers unique products				,419	

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 4. Rotated Factor Matrix, 1st rotation

So, the next rotation without previously deleted items shows a good KMO test value and Barlett's test is significant too.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,895
Bartlett's Test of Sphericity	Approx. Chi-Square	2525,646
	df	120
	Sig.	,000

Table 5. KMO and Barlett's Test, 2nd rotation

The communalities table doesn't show any values below 0.3, so no items should be deleted at this stage. The cumulative variance explained increased to 66.494. Both tables can be seen in the appendix.

The number of factors decreased to 4. The rotated factor matrix is available in the appendix. Two items don't meet the factors loadings requirements, so at this stage the following variables are being excluded:

1. *When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)*
2. *The Brand offers a wide range of products*

The third rotation also show a high value for KMO test and significance for Barlett's test.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,882
Bartlett's Test of Sphericity	Approx. Chi-Square	2175,440
	df	91
	Sig.	,000

Table 6. KMO and Barlett's Test, 3rd rotation

There are no communalities less than 0.3 and the cumulative variance explained equals to 68.668. Both tables are available in the appendix.

The final rotated matrix shows 4 factors. There are some cross-loadings and values close to 0.5:

1. *This brand comes to my mind when mentioning grocery delivery*
2. *When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)*

However, those items will be considered as ones in question and checked later for consistency with the model.

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
Making an order and paying for it in the Brand app is very easy	,874			
I have no problems using the Brand app	,744			
I like the Brand app	,653	,380		
I easily recognize this brand among others	,570			
This brand comes to my mind when mentioning grocery delivery	,554	,351		

When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	,541			
I like this brand	,352	,832		
I trust this brand	,369	,815		
I prefer this brand to others		,655		
I would recommend Brand to my family and friends	,464	,636		
Brand support staff always listen to me and try to help			,944	
If there are problems, Brand support solves them and compensates me for the losses			,773	
I am satisfied with the prices in this store				,827
I like the promotions in this store				,627

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table 7. Rotated Factor Matrix, 3rd rotation

As a result, there were identified 4 factors, which correspond with the logic of the original model, but some of them differ.

Brand Awareness

1) *Making an order and paying for it in the Brand app is very easy*
2) *I have no problems using the Brand app*
3) *I like the Brand app*
4) *I easily recognize this brand among others*
5) *This brand comes to my mind when mentioning grocery delivery*
6) *When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)*

The first interesting finding appears: in the case of e-grocery, app items load the awareness factor heavily. Also, one of the variables comes from Brand Associations, which were not identified as a factor in the analysis. This item will possibly be deleted due to the rather small loading.

Brand Loyalty

1) *I like this brand*
2) *I trust this brand*
3) *I prefer this brand to others*
4) *I would recommend Brand to my family and friends*

For this factor every item corresponds with the original theory.

Customer Support

1) *Brand support staff always listen to me and try to help*
2) *If there are problems, Brand support solves them and compensates me for the losses*

This factor is responsible for the perception of brand's employees and its efforts to solve unexpected problems with orders. Even though, this factor was expected to consist of items related to couriers, they were omitted due to the low loadings.

Perceived Value

1) *I am satisfied with the prices in this store*
2) *I like the promotions in this store*

The factor corresponds with the theory from previous studies. Perceived Value includes such elements as price, quality, promotions, customer satisfaction of the service, but in case of this study only items related to price and promos were identified as significant.

The next step after the conduction of EFA is checking whether the items within the factors are consistent with them. For this purposes Cronbach's Alpha is used as a reliability test in this study. Each factor was checked separately, so that the overall Cronbach's Alpha should be more than 0.7, as a most frequent threshold, and items themselves shouldn't show a value exceeding the overall one. At this point, every factor was found to be reliable, which can be seen in the table below. Regarding the items inside, there is one inside the Brand Loyalty that is slightly exceeding the overall value (*I prefer this brand to others*), but it was decided not to exclude them, considering the confirmatory factor analysis as a next step. The full reliability tests are available in the appendix.

	Brand Awareness	Brand Loyalty	Customer Support	Perceived Quality
Required threshold	0.7	0.7	0.7	0.7
Actual value	0.886	0. 918	0.913	0.747

Table 8. Brief Chrobah's Alpha for factors

3.3.2. Confirmatory Factor Analysis

After identifying the elements of the model, it is essential to test whether the model is consistent and test the hypotheses, which were stated before. For these purposes the Confirmatory Factor Analysis through the AMOS is being used in this study.

First the model should be constructed. The initial hypotheses consider that all of the factors influence each other, and the variables influence those factors. The 4 factors were used as unobserved variables, while the initial variables derived from the questionnaires were used as observed variables, and e's in the model are used as errors. Hence, the initial model was constructed as presented below:

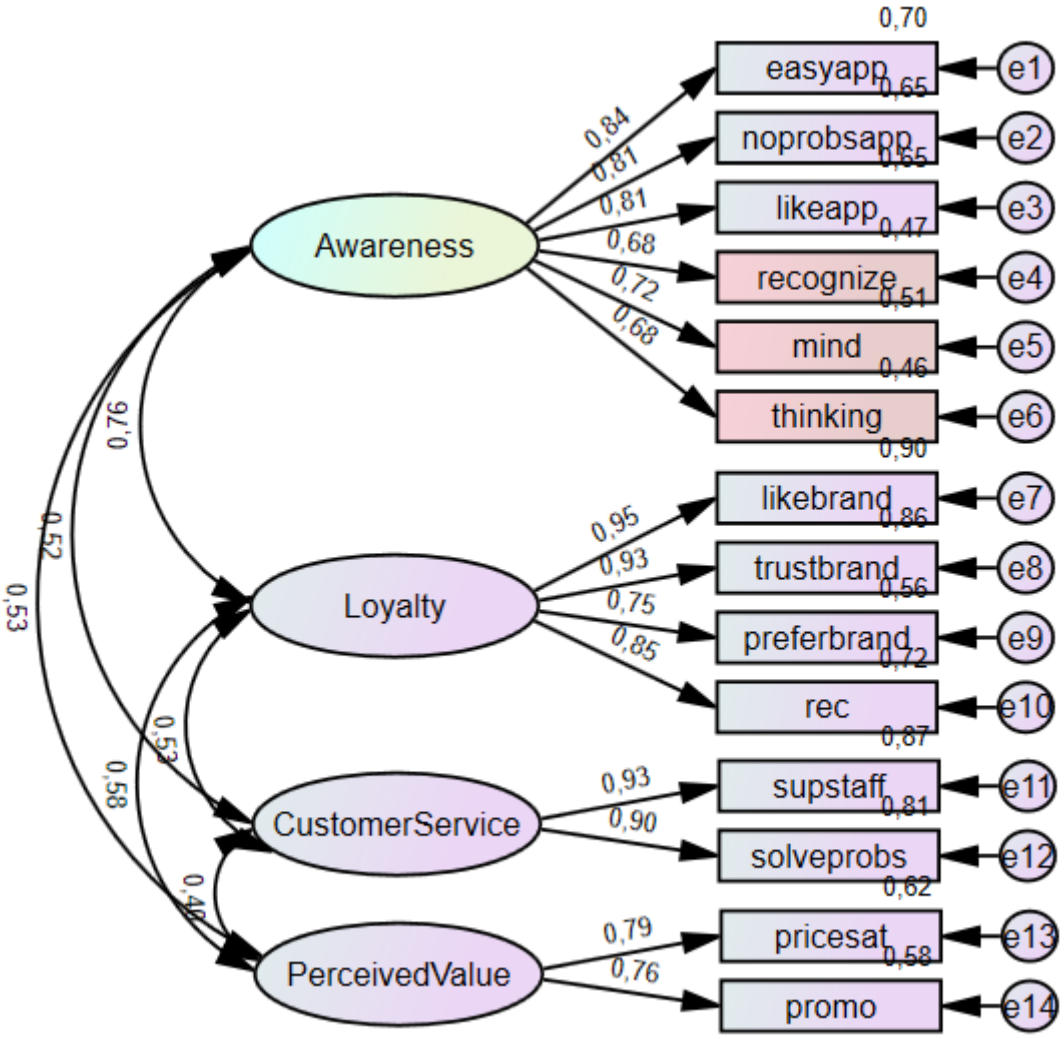

Figure 7. CFA 1st iteration

The model fit was found to be not very consistent. All of the indicators are below the required thresholds[25]. The results can be seen in the summary table below:

Indicator	GFI	CFI	TLI	RMSEA	PCLOSE
Required threshold	>0.9	>0.95	>0.9	<0.05	>0.05
Actual value	0.85	0.919	0.896	0.107	0.000

Table 9. Model Fit, 1st iteration

Also, there is an observed variable, which has an estimate below 0.7, so in order to improve the quality of the model this item is being excluded and the CFA analysis runs again. The more detailed output can be found in the Appendix.

The new model is better than the first one, having GFI=0.886 and CFI=0.936, however it's quality is not high enough still. Also, the item mind has an estimate below 0.7, so it is being excluded for the third iteration. The more detailed output can be found in the Appendix.

[25] Hu, L. T., & Bentler, P. M. 1999. Cut-off criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. StructEqu Modeling. 6: 1-55.

The third variant of the model is sufficient in quality, which can be seen from the table below.

Indicator	GFI	CFI	TLI	RMSEA	PCLOSE
Required threshold	>0.9	>0.95	>0.9	<0.05	>0.05
Actual value	0.905	0.951	0.929	0.103	0.000

Table 10. Model fit, 3rd iteration

Moreover, all of the estimates are significant and exceed the 0.7 threshold. The more detailed output is available in the appendix. This allows to finalize the dimensions and items of the model like following:

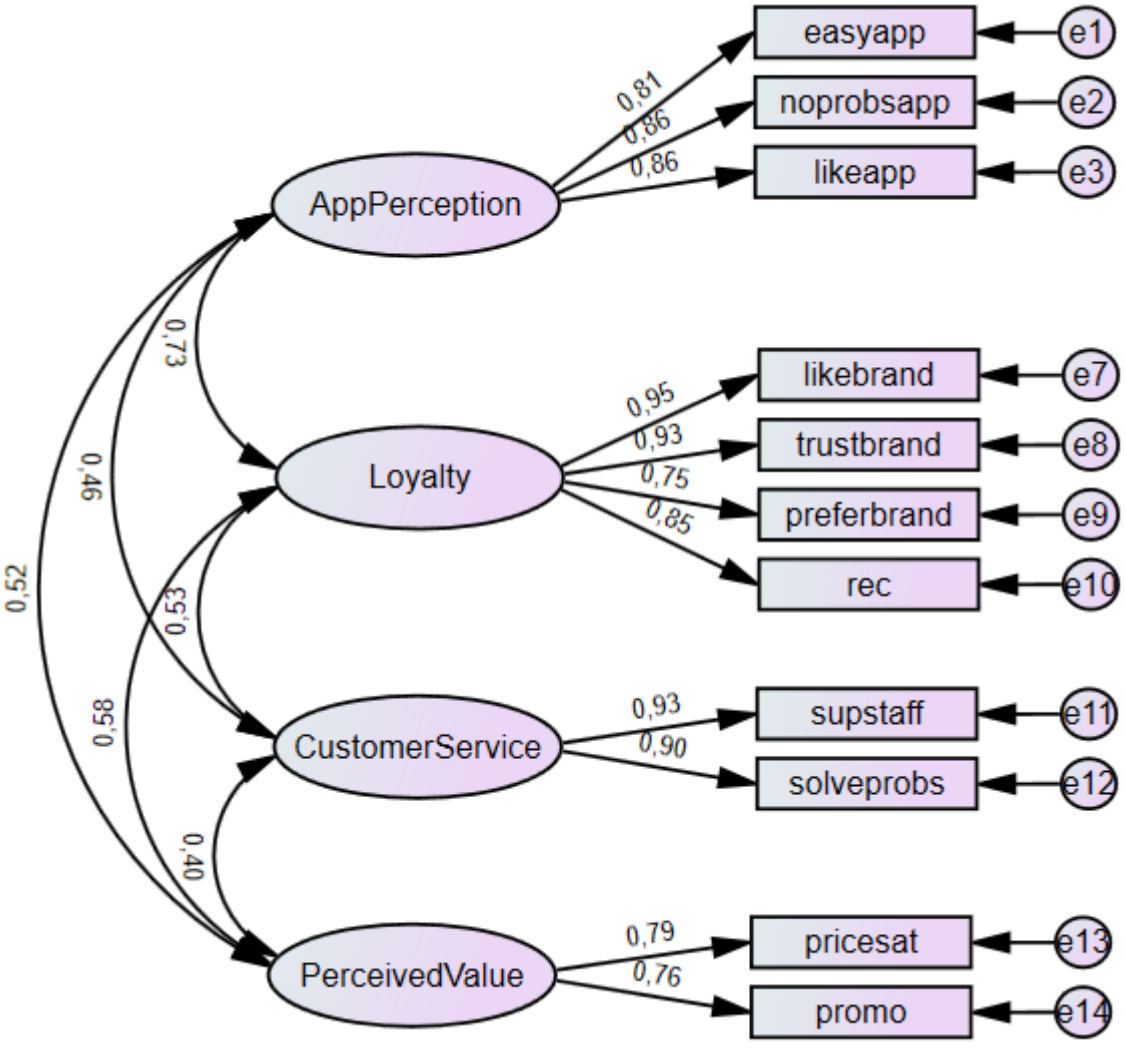

Figure 8. CFA final

Finally, the model consists of 4 factors, which are the same as it was identified through the EFA, noting that Brand Awareness dimension was renamed due to the final set of items, all of which correspond with app opinions of customers. However, 2 items were deleted, resulting in 11 items overall. All of the covariances and regression estimates are significant, so each factor influences other ones.

H2 and H3 in this case are not rejected, since the CFA showed that the model, which includes Loyalty and Perceived Value as Customer-Based Brand Equity dimensions is consistent. H1 is rejected, since the factor consists of App Perception in the end, while H4 was rejected at EFA stage.

3.3.3. Structural Equation Modelling

Next, it is important to explore how factors influence each other through the SEM path analysis. For these purposes a model, where Brand Loyalty appears as the main factor, on which each other factor influences.

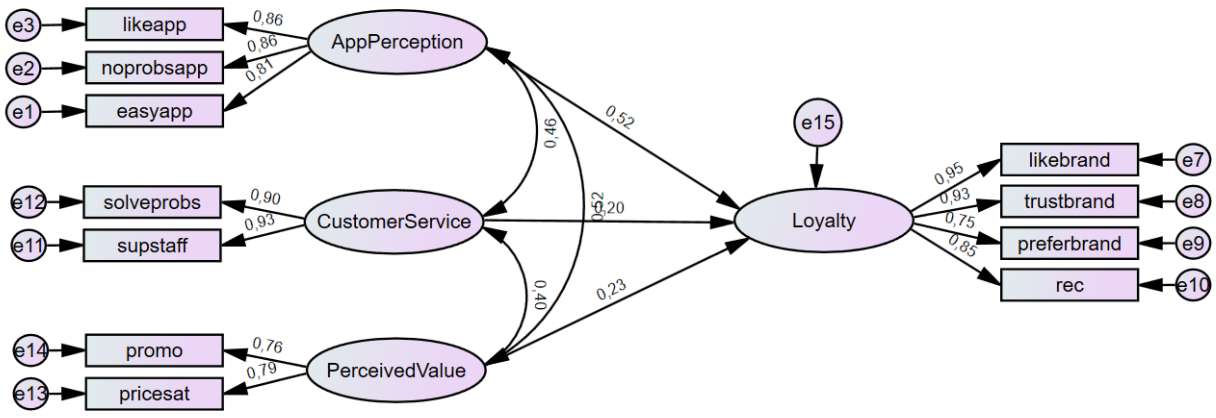

Figure 9. SEM

The overall quality of the SEM model is the same is it was in CFA final iteration.

Indicator	GFI	CFI	TLI	RMSEA	PCLOSE
Required threshold	>0.9	>0.95	>0.9	<0.05	>0.05
Actual value	0.905	0.951	0.929	0.103	0.000

Table 11. Model fit, SEM

Based on the results obtained through the SEM path analysis, H1-H4 can be finally validated:

H1: *Brand Awareness is one of the dimensions of CBBE model for e-grocery*. – Rejected.

H2: *Brand Loyalty is one of the dimensions of CBBE model for e-grocery*. – Not rejected.

H3: *Brand Associations is one of the dimensions of CBBE model for e-grocery*. – Rejected.

This dimension wasn't identified through the factor analysis.

H4: *Perceived Value is one of the dimensions of CBBE model for e-grocery*. – Not Rejected.

To validate the next 2 sections of hypotheses the regression estimations should be assessed. The table below presents standardized regression estimates for the model. All of them are significant, what can be checked trough the full output in the appendix.

			Estimate
Loyalty	<---	Awareness	,516
Loyalty	<---	PerceivedValue	,234
Loyalty	<---	CustomerService	,197
easyapp	<---	Awareness	,813
noprobsapp	<---	Awareness	,862
likeapp	<---	Awareness	,862
likebrand	<---	Loyalty	,949
trustbrand	<---	Loyalty	,926
preferbrand	<---	Loyalty	,751
rec	<---	Loyalty	,850
supstaff	<---	CustomerService	,935
solveprobs	<---	CustomerService	,900
pricesat	<---	PerceivedValue	,786
promo	<---	PerceivedValue	,759

Table 12. Standardized regression weights

H5: *Brand Awareness positively and directly influences Brand Loyalty.* – Can't be validated.

H6: *Brand Associations positively and directly influences Brand Loyalty.* – Can't be validated.

H7: *Perceived Value positively and directly influences Brand Loyalty.* – Not rejected.

So, the results show that 1 hypothesis is not rejected, while H5 and H6 can't be validated, since the Associations dimension wasn't identified through analysis and the Brand Awareness doesn't consist of awareness items, so it was transformed into a new dimension – App Perception. This dimension has the highest positive and direct influence, what should be considered later at the discussion module.

Regarding the influence of items on factors, Trust loads the Brand Loyalty dimension heavily, but the Liking of the brand has higher value. App easiness has a high influence on Brand Awareness but Liking the app and Having no problems with it loads the factor more. Therefore, H8 and H9 are rejected. Regarding the H10, Price Satisfaction has the highest estimate within Perceived Value dimension, hence H10 is not rejected.

H8: *Trust has the highest positive and direct influence on Brand Loyalty. – Rejected.*

H9: *Price satisfaction has the highest positive and direct influence on Perceived Value. – Not rejected.*

So, the finalized Customer Based Brand Equity for e-grocery will look like:

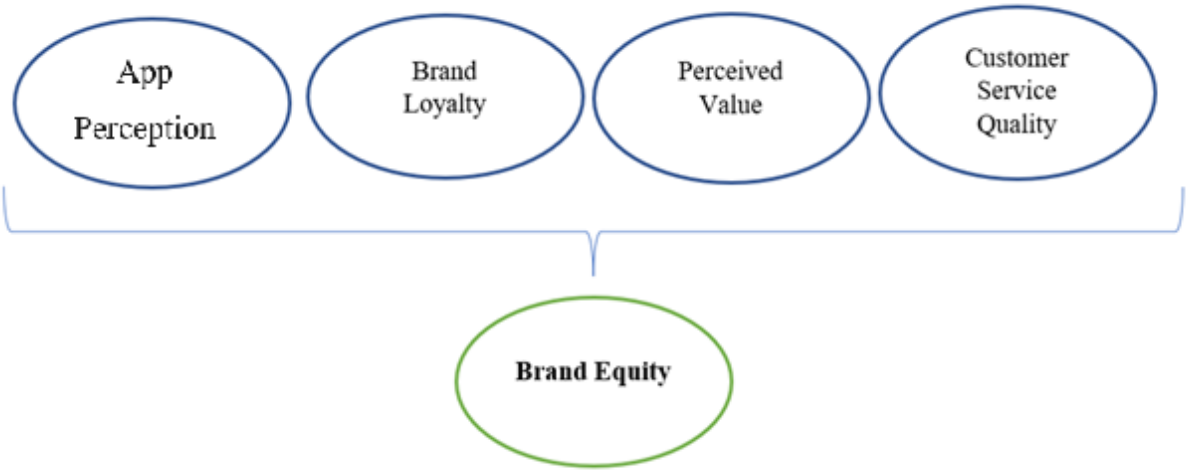

Figure 10. Final CBBE model for e-grocery

3.3.4. Discussion of the results

App

Perception

All in all, the new model of customer-based brand equity was derived. The quality of the model is satisfactory, but still isn't perfect, which may result in distorted conclusions. The reason for it might be rather small sample size (N=214) with overweight of Samokat's responses. Therefore, future research should focus on deeper exploration of the topic with more diverse and numerous samples, covering regions other than Saint-Petersburg and Moscow (which prevail in current study).

The obtained dimensions partially support the initial theoretical frameworks, having such dimensions as Brand Loyalty and Perceived Value, while others correspond to newer papers, which include customer service, for example. The App Perception dimension is logically consistent, but rather new compared to fundamental models, since in times of developing such, there was no commerce through mobile apps.

3.4. Research limitations and managerial implications (recommendations)

Regarding the managerial implications, this study can be used by e-grocery retailers to measure their brand equity. The results of the measurement will show, which aspects should be developed by brand to build strong relationships with consumers and what should be fixed to increase their satisfaction over the brand.

First of all, e-grocery retailers should consider all four identified dimensions. They all correspond to each other and their addition results in overall increased brand equity, benefits of which were stated in the study. If a retailer wants to build a strong brand and gain advantage in the fast changing and competitive environment of FMCG, it should measure the level of each dimension for itself (using surveys of consumers or other suitable methods) and then pay increased attention to those dimensions, which have the lowest estimations, but also not forgetting to improve others, since they all work together and influence each other.

If a brand has a low level of Customer Service Quality, it should address its attention to techniques of fixing the problems with customer purchases. For example, in case of delivering expired or damaged product Samokat offers money back for this product, plus 10% off the next order. The use of such practices helps to reduce consumer dissatisfaction with emerging problems and forgive the brand for missteps that somehow happen to everyone. It is necessary to introduce user-friendly means of communication with the brand, such as: a hotline, a chat with employees in the application, so that each user can choose the most suitable option for him and quickly solve his problem. Also, customer support staff should communicate with customers as politely and clearly as possible, which will also increase their opinion of support.

In case of low Perceived Value, brand should pay attention to its pricing and promoting. As it was revealed from the market overview, pricing in case of e-retail might be even more important than loyalty in a long-term due to changing consumer behavior. High-quality discounts and promotions, coupled with the high quality of the products themselves, will encourage customers to choose the right brand. Seasonal offers, accumulation and loyalty programs that allow to purchase goods more profitably are also among the tools to increase Perceived Value. Shipping costs should also be taken into account when improving this measurement, as it plays an important role in the final cost of the shopping cart. Often, free shipping is perceived more positively than a shopping cart with paid shipping of the same cost.

The most important dimension, which is specific for e-grocery, is App Perception, so it should be considered in a first order. The convenience and simplicity of the mobile app has the highest impact on this dimension. Also, the user should not have any problems when using it, such as lags, crashes, and freezes. To improve the quality of the application, you need to trust us with the best specialists in the field of IT and design. Testing applications in focus groups, collecting feedback from users, monitoring activity in sections of the application can be great tools to identify strengths and weaknesses in order to improve. Thus, a quality application will have a very strong impact on consumer loyalty, increasing the consumer equity of the brand.

The highest order dimension, Brand Loyalty, needs to be improved not only by the other three dimensions, but also by improving internal items. For example, a study found that loyalty is

highly influenced by trust. In the online realm, gaining user trust is harder and more important than offline. It is necessary to qualitatively protect user data from leaks, fulfill orders correctly, and in case of errors, take responsibility for them and correct existing problems quickly. Trust can also be influenced by factors such as the friendly tone of communication of brand representatives on social networks, building close contact with users, transparent financial management, as well as providing quality services that do not require additional live verification.

Moreover, the research contributes to the theoretical development of the branding field. The identified research gap, which appears in lack of literature and model usage in a field of online retail e-grocery, diminishes by the proposed model of this study. The study provides a Russian context for consumer brand equity, narrowly examines online food retail, and provides opportunities for further research.

However, the study has several limitations. First, its geographical restriction since the analysis is done only for Russia only. There is no knowledge on how the results fit brands in other countries due to different consumer behavior, socio-economic conditions, legal issues, etc. Moreover, the analysis excluded the other proprietary brand assets element due to the difficulties in testing, while this dimension might be important. Next, there is a strong overweight of Samokat respondents in the sample, so the influence of the brand might be significant. Another sample limitation arises from the very limited diversity of respondents. The majority of them were female students, who do not represent the population of Russia. The last limitation arises from the usage of only two e-grocery brands with very similar business models, so the results might not be fully applicable for other services, which have physical stores or rely heavily on websites, which were not considered in this study.

CONCLUSION

The first chapter of the research analyzed current literature on brand equity and online retailers. This helped to identify a research gap in covering the e-grocery in Russia aspect of the term. As a result, hypotheses were derived from the literature overview in order to address the existing research gap.

Market overview supporter the need of competitive advantage achievement on the field of high competition not only among e-grocery retailers, but also among online brands versus classical physical stores. The study revealed that e-grocery market grows fast for last couple of years and predictions assume that the growth will continue further. The special attention was brought to behavioral trends in exact field, since understanding such might help in coming up with ways of

improving brand equity. There are certain patterns of behavior, like lack of online trust, existing due to specifics of e-retail, which should be also considered by companies.

The empirical part was focused on deriving suitable dimensions by proceeding the obtained through questionnaires data with exploratory factor analysis. During EFA some of the items were excluded, forming 4 factors that had potential to become a new framework. Next step was confirmatory factors analysis, which validated the obtained factors and excluded some more items from them. As a result, one of the factors were renamed from Brand Awareness to App Perception, since the final internal variables were not associated with the initial naming. Structural equation modelling allowed to finally validate the hypotheses and test the interconnections within four dimensions and items inside of them. Overall, 4 of 9 hypotheses were not rejected, while others were rejected or were impossible to validate due to absence of certain dimensions.

In summary, all three research questions were addressed through the study, since the end result appeared in a form of CBBE model for measuring brand equity of e-grocery retailers, as it was expected. The interconnections between dimensions and items were observed too.

The finalized customer-based brand equity model consists of 4 dimensions: Brand Loyalty, Perceived Value, Customer Service Quality and App Perception. Brand Loyalty was taken as a main dimension, on which other factors influence. The highest influence was found from App Perception, while Customer Service Quality and Perceived Value showed much less of effect.

The further research should test the results of this study on broader spectrum of e-grocery brands, overcoming the existing limitations. Other brands, focus on smaller regions or more diverse sample might show the support for obtained results or correction of them.

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APPENDIXES

Appendix 1.

Questionnaire "Samokat"

Section 1

1. Which of the food delivery services come to your mind first?

_____

Section 2

2. Which food delivery services are you familiar with? *(Multiple choice)*

- Samokat
- Yandex.Lavka
- SberMarket
- Utkonos
- Perekrestok/ Perekrestok Vprok
- Vkusvill
- Other: _____

3. Which of them have you used at least once? *(Multiple choice)*

- Samokat
- Yandex.Lavka
- SberMarket
- Utkonos
- Perekrestok/ Perekrestok Vprok
- Vkusvill
- Other: _____

4. Are you familiar with online-retailer Samokat?

- Yes, I've shopped there *(redirect to Section 3)*
- Yes, but I haven't shopped there *(redirect to Section 4)*
- No *(Redirect to Section 5)*

Section 3 *(Only for those, who shopped at "Samokat")*

5. How often do you shop at "Samokat"?

- Almost everyday
- 2-3 times a week
- 1 time per week
- 2-3 times a month
- 1 time per month
- Less than 1 time per month

6. What is your average spending at “Samokat” for 1 visit?

- Less than 500 rub
- 501-1000 rub
- 1001-1500 rub
- 1501-2000 rub
- 2001-2500 rub
- 2501-3000 rub
- More than 3000 rub

7. Please rate the degree of agreement with the following expressions on a scale from 1 to 5, where 1 - "Strongly disagree", 2 - "Rather disagree", 3 - "Not sure", 4 - "Rather agree", 5 - "Strongly agree" regarding the online retailer “Samokat”:

		1	2	3	4	5
1	I easily recognize this brand among others					
2	I can easily describe the symbolism (logo) of this brand					
3	When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)					
4	This brand comes to my mind when mentioning grocery delivery					
5	I like this brand					
6	I trust this brand					
7	I prefer this brand to others					
8	I like the quality of the goods presented in the Samokat					
9	The Samokat offers a wide range of products					
10	Samokat offers unique products					
11	I often order products under Samokat’s own brand					
12	I am satisfied with the prices in this store					
13	I like the promotions in this store					
14	I like the Samokat app					
15	I have no problems using the Samokat app					
16	Making an order and paying for it in the Samokat app is very easy					
17	I like Samokat’s delivery					

18	I often prefer ordering grocery delivery from Samokat to going to a physical store					
19	Samokat couriers are always polite and do their job efficiently					
20	Samokat support staff always listen to me and try to help					
21	If there are problems, Samokat support solves them and compensates me for the losses					
22	The Samokat makes every effort to ensure that the customer is satisfied					
23	I would recommend Samokat to my family and friends					

Section 4 *(Only for those, who know "Samokat", but haven't shop there)*

8. Please rate the degree of agreement with the following expressions on a scale from 1 to 5, where 1 - "Strongly disagree", 2 - "Rather disagree", 3 - "Not sure", 4 - "Rather agree", 5 - "Strongly agree" regarding the online retailer "Samokat":

		1	2	3	4	5
1	I easily recognize this brand among others					
2	I can easily describe the symbolism (logo) of this brand					
3	When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)					
4	This brand comes to my mind when mentioning grocery delivery					
5	I like this brand					
6	Samokat offers a wide range of products					
7	Samokat offers unique products					
8	I am satisfied with the prices in this store					
9	I like the Samokat app					
10	I have no problems using the Samokat app					
11	Making an order and paying for it in the Samokat app is very easy					

9. For what reasons did you not place orders in Samokat? (select up to 3 options) *(Multiple choice)*

- There was no need
- I prefer to evaluate the quality of goods live
- Delivery is not convenient
- Inconvenient app
- Not satisfied with prices
- Other: _____

Section 5 *(Demographics for all respondents)*

10. Enter your gender:

- Female
- Male
- Other

11. Enter your age:

- Less than 18 years
- 18-24
- 25-30
- 31-40
- 41-50
- 51-60
- More than 60

12. Enter your level of education:

- Incomplete secondary
- Secondary
- Secondary specialized
- Incomplete graduate
- Graduate

13. How would you describe the financial situation of your family?

- We don't always have enough money even for food
- We have enough money for food, but buying clothes is a serious problem for us
- We have enough money for food and clothes, but it will be difficult for us to buy a TV, a refrigerator or a washing machine
- We can buy basic household appliances, but we don't have enough for a car
- Our finances are enough for everything, except for such expensive acquisitions as an apartment or a country house
- We don't have any financial difficulties. If necessary, we can buy an apartment or a house

Appendix 2.

Questionnaire "Yandex.Lavka"

Section 1

1. Are you familiar with online-retailer Yandex.Lavka?

- Yes, I've shopped there *(redirect to Section 3)*
- Yes, but I haven't shopped there *(redirect to Section 4)*
- No *(Redirect to Section 5)*

Section 2 *(Only for those, who shopped at "Yandex.Lavka")*

5. How often do you shop at "Yandex.Lavka"?

- Almost everyday
- 2-3 times a week
- 1 time per week
- 2-3 times a month
- 1 time per month
- Less than 1 time per month

6. What is your average spending at "Yandex.Lavka" for 1 visit?

- Less than 500 rub
- 501-1000 rub
- 1001-1500 rub
- 1501-2000 rub
- 2001-2500 rub
- 2501-3000 rub
- More than 3000 rub

7. Please rate the degree of agreement with the following expressions on a scale from 1 to 5, where 1 - "Strongly disagree", 2 - "Rather disagree", 3 - "Not sure", 4 - "Rather agree", 5 - "Strongly agree" regarding the online retailer "Yandex.Lavka":

		1	2	3	4	5
1	I easily recognize this brand among others					
2	I can easily describe the symbolism (logo) of this brand					
3	When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)					
4	This brand comes to my mind when mentioning grocery delivery					
5	I like this brand					
6	I trust this brand					
7	I prefer this brand to others					
8	I like the quality of the goods presented in the Yandex.Lavka					
9	The Yandex.Lavka offers a wide range of products					
10	Yandex.Lavka offers unique products					

11	I often order products under Yandex.Lavka's own brand					
12	I am satisfied with the prices in this store					
13	I like the promotions in this store					
14	I like the Yandex.Lavka app					
15	I have no problems using the Yandex.Lavka app					
16	Making an order and paying for it in the Yandex.Lavka app is very easy					
17	I like Yandex.Lavka's delivery					
18	I often prefer ordering grocery delivery from Yandex.Lavka to going to a physical store					
19	Yandex.Lavka couriers are always polite and do their job efficiently					
20	Yandex.Lavka support staff always listen to me and try to help					
21	If there are problems, Yandex.Lavka support solves them and compensates me for the losses					
22	The Yandex.Lavka makes every effort to ensure that the customer is satisfied					
23	I would recommend Yandex.Lavka to my family and friends					

Section 3 *(Only for those, who know "Yandex.Lavka", but haven't shop there)*

8. Please rate the degree of agreement with the following expressions on a scale from 1 to 5, where 1 - "Strongly disagree", 2 - "Rather disagree", 3 - "Not sure", 4 - "Rather agree", 5 - "Strongly agree" regarding the online retailer "Yandex.Lavka":

		1	2	3	4	5
1	I easily recognize this brand among others					
2	I can easily describe the symbolism (logo) of this brand					
3	When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)					
4	This brand comes to my mind when mentioning grocery delivery					
5	I like this brand					
6	Yandex.Lavka offers a wide range of products					
7	Yandex.Lavka offers unique products					
8	I am satisfied with the prices in this store					
9	I like the Yandex.Lavka app					
10	I have no problems using the Yandex.Lavka app					
11	Making an order and paying for it in the Yandex.Lavka app is very easy					

9. For what reasons did you not place orders in Yandex.Lavka? (select up to 3 options) *(Multiple choice)*

- There was no need
- I prefer to evaluate the quality of goods live
- Delivery is not convenient
- Inconvenient app
- Not satisfied with prices
- Other: _____

Section 4 *(Demographics for all respondents)*

10. Enter your gender:

- Female
- Male
- Other

11. Enter your age:

- Less than 18 years
- 18-24
- 25-30
- 31-40
- 41-50
- 51-60
- More than 60

12. Enter your level of education:

- Incomplete secondary
- Secondary
- Secondary specialized
- Incomplete graduate
- Graduate

13. How would you describe the financial situation of your family?

- We don't always have enough money even for food
- We have enough money for food, but buying clothes is a serious problem for us
- We have enough money for food and clothes, but it will be difficult for us to buy a TV, a refrigerator, or a washing machine
- We can buy basic household appliances, but we don’t have enough for a car

- Our finances are enough for everything, except for such expensive acquisitions as an apartment or a country house
- We don't have any financial difficulties. If necessary, we can buy an apartment or a house

Appendix 3.

Total Variance Explained (Rotation 1)

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11,080	48,174	48,174	10,635	46,240	46,240	4,372	19,008	19,008
2	1,563	6,794	54,968	1,182	5,140	51,381	4,102	17,834	36,842
3	1,419	6,170	61,138	1,044	4,541	55,922	2,765	12,021	48,862
4	1,231	5,353	66,491	,995	4,327	60,249	2,550	11,088	59,950
5	1,003	4,360	70,851	,514	2,236	62,485	,583	2,534	62,485
6	,870	3,784	74,635						
7	,767	3,335	77,970						
8	,683	2,968	80,938						
9	,578	2,512	83,450						
10	,511	2,220	85,670						
11	,432	1,878	87,548						
12	,422	1,837	89,385						
13	,381	1,655	91,040						
14	,362	1,574	92,614						
15	,300	1,304	93,918						
16	,267	1,161	95,078						
17	,244	1,061	96,139						
18	,208	,904	97,043						
19	,189	,820	97,863						
20	,155	,673	98,537						
21	,135	,587	99,124						
22	,125	,544	99,668						
23	,076	,332	100,000						

Extraction Method: Maximum Likelihood.

Appendix 4.

Communalities (Rotation 2)

Communalities[a]

	Initial	Extraction
I prefer this brand to others	,632	,592
I trust this brand	,834	,869
I like this brand	,852	,896
I would recommend Brand to my family and friends	,798	,759
I like Brand's delivery	,717	,678
I have no problems using the Brand app	,682	,648
Making an order and paying for it in the Brand app is very easy	,729	,870
I like the Brand app	,665	,636
If there are problems, Brand support solves them and compensates me for the losses	,744	,725
Brand support staff always listen to me and try to help	,764	,999
I am satisfied with the prices in this store	,506	,752
I like the promotions in this store	,435	,511
I easily recognize this brand among others	,497	,426
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	,529	,427
This brand comes to my mind when mentioning grocery delivery	,573	,495
The Brand offers a wide range of products	,371	,357

Extraction Method: Maximum Likelihood.

a. One or more communalitiy estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.

Appendix 5.

Total Variance Explained (Rotation 2)

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,129	50,809	50,809	4,044	25,276	25,276	3,606	22,536	22,536
2	1,372	8,578	59,387	4,814	30,085	55,361	3,207	20,041	42,577
3	1,251	7,819	67,206	,886	5,540	60,901	1,940	12,126	54,703
4	1,100	6,874	74,080	,895	5,593	66,494	1,887	11,791	66,494
5	,769	4,809	78,889						
6	,626	3,914	82,803						
7	,482	3,012	85,814						
8	,425	2,658	88,472						
9	,375	2,344	90,816						

10	,374	2,340	93,156						
11	,298	1,860	95,016						
12	,230	1,436	96,452						
13	,192	1,197	97,649						
14	,157	,983	98,633						
15	,134	,840	99,472						
16	,084	,528	100,000						

Extraction Method: Maximum Likelihood.

Appendix 6.

Rotated Factor Matrix (Rotation 2)

Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
Making an order and paying for it in the Brand app is very easy	,895			
I have no problems using the Brand app	,722			
I like the Brand app	,627	,378		
I easily recognize this brand among others	,554			
This brand comes to my mind when mentioning grocery delivery	,541	,354		
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	,522			
I trust this brand	,350	,810		
I like this brand	,339	,807		,331
I prefer this brand to others		,673		
I would recommend Brand to my family and friends	,470	,648		
I like Brand's delivery	,542	,554		
Brand support staff always listen to me and try to help			,939	
If there are problems, Brand support solves them and compensates me for the losses			,769	
I am satisfied with the prices in this store				,832
I like the promotions in this store				,642
The Brand offers a wide range of products				,474

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Appendix 7.

Communalities (Rotation 3)

Communalities[a]

	Initial	Extraction
I prefer this brand to others	,619	,573
I trust this brand	,826	,868
I like this brand	,850	,914

I would recommend Brand to my family and friends	,758	,738
I have no problems using the Brand app	,669	,669
Making an order and paying for it in the Brand app is very easy	,702	,830
I like the Brand app	,662	,651
If there are problems, Brand support solves them and compensates me for the losses	,743	,724
Brand support staff always listen to me and try to help	,762	,999
I am satisfied with the prices in this store	,458	,764
I like the promotions in this store	,432	,509
I easily recognize this brand among others	,491	,437
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	,527	,439
This brand comes to my mind when mentioning grocery delivery	,571	,500

Extraction Method: Maximum Likelihood.

a. One or more communalitiy estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.

Appendix 8.

Total Variance Explained (Rotation 3)

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,235	51,676	51,676	3,686	26,332	26,332	3,382	24,159	24,159
2	1,271	9,081	60,757	4,213	30,093	56,425	2,865	20,461	44,620
3	1,220	8,716	69,473	,935	6,678	63,103	1,910	13,646	58,266
4	1,022	7,297	76,770	,779	5,565	68,668	1,456	10,403	68,668
5	,754	5,389	82,159						
6	,475	3,389	85,548						
7	,403	2,877	88,425						
8	,378	2,703	91,128						
9	,340	2,428	93,555						
10	,270	1,927	95,483						
11	,239	1,707	97,190						
12	,166	1,183	98,373						
13	,139	,995	99,368						
14	,088	,632	100,000						

Extraction Method: Maximum Likelihood.

Appendix 9.

Cronbach's Alpha for factors

Factor 1: Brand Awareness

Reliability Statistics

Cronbach's Alpha	N of Items
,886	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Making an order and paying for it in the Brand app is very easy	21,72	15,384	,794	,854
I have no problems using the Brand app	21,98	14,586	,719	,864
I like the Brand app	22,08	15,078	,708	,865
I easily recognize this brand among others	21,73	15,135	,662	,873
This brand comes to my mind when mentioning grocery delivery	21,91	15,086	,679	,870
When I think about this brand, I have associations with it (any characteristics of the brand: colors, advertising, couriers, etc.)	21,77	15,898	,661	,873

Factor 2: Brand Loyalty

Reliability Statistics

Cronbach's Alpha	N of Items
,918	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I like this brand	11,81	9,965	,874	,877
I trust this brand	11,83	9,674	,852	,881
I prefer this brand to others	12,30	8,898	,745	,929
I would recommend Brand to my family and friends	11,72	10,043	,821	,892

Factor 3: Customer Support

Reliability Statistics

Cronbach's Alpha	N of Items
,913	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Brand support staff always listen to me and try to help	3,72	1,236	,841	.
If there are problems, Brand support solves them and compensates me for the losses	3,80	1,091	,841	.

Factor 4: Perceived Value

Reliability Statistics

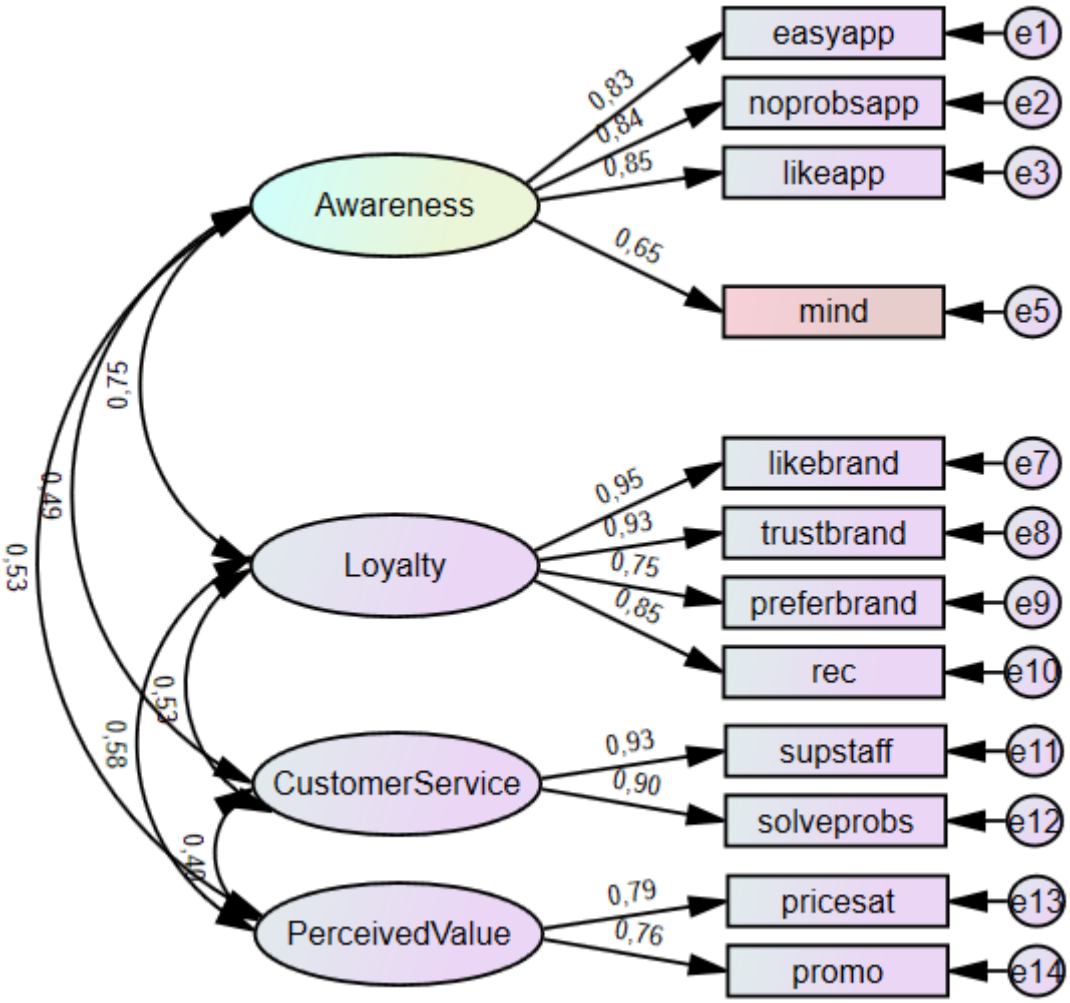
Cronbach's Alpha	N of Items
,747	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am satisfied with the prices in this store	3,25	1,239	,597	.
I like the promotions in this store	3,36	1,235	,597	.

Appendix 10.

Confirmatory Factor Analysis (Iteration 2)



Appendix 11.

Confirmatory Factor Analysis Output, 1st iteration

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
easyapp	<---	Awareness	1,000				
noprobsapp	<---	Awareness	1,180	,085	13,824	***	par_1
likeapp	<---	Awareness	1,105	,080	13,837	***	par_2
recognize	<---	Awareness	,973	,089	10,954	***	par_3
mind	<---	Awareness	1,010	,086	11,672	***	par_4
thinking	<---	Awareness	,849	,078	10,862	***	par_5
likebrand	<---	Loyalty	1,000				
trustbrand	<---	Loyalty	1,042	,041	25,496	***	par_6
preferbrand	<---	Loyalty	1,037	,069	14,957	***	par_7
rec	<---	Loyalty	,925	,047	19,733	***	par_8
supstaff	<---	CustomerService	1,000				
solveprobs	<---	CustomerService	1,029	,078	13,109	***	par_9
pricesat	<---	PerceivedValue	1,000				
promo	<---	PerceivedValue	,970	,131	7,428	***	par_10

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
easyapp	<---	Awareness	,839
noprobsapp	<---	Awareness	,807
likeapp	<---	Awareness	,807
recognize	<---	Awareness	,683
mind	<---	Awareness	,716
thinking	<---	Awareness	,678
likebrand	<---	Loyalty	,949
trustbrand	<---	Loyalty	,926
preferbrand	<---	Loyalty	,751
rec	<---	Loyalty	,850
supstaff	<---	CustomerService	,933
solveprobs	<---	CustomerService	,902
pricesat	<---	PerceivedValue	,785

			Estimate
promo	<---	PerceivedValue	,760

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CustomerService	<-->	PerceivedValue	,339	,077	4,384	***	par_11
Loyalty	<-->	PerceivedValue	,492	,083	5,936	***	par_12
Awareness	<-->	PerceivedValue	,327	,061	5,326	***	par_13
Loyalty	<-->	CustomerService	,499	,079	6,289	***	par_14
Awareness	<-->	CustomerService	,360	,061	5,952	***	par_15
Awareness	<-->	Loyalty	,525	,067	7,845	***	par_16

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	244,159	71	,000	3,439
Saturated model	105	,000	0		
Independence model	14	2233,103	91	,000	24,540

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,056	,855	,785	,578
Saturated model	,000	1,000		
Independence model	,501	,242	,125	,210

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,891	,860	,920	,896	,919
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,780	,695	,717
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	173,159	129,385	224,530
Saturated model	,000	,000	,000
Independence model	2142,103	1991,863	2299,698

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1,146	,813	,607	1,054
Saturated model	,000	,000	,000	,000
Independence model	10,484	10,057	9,351	10,797

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,107	,092	,122	,000

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	,332	,321	,344	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	312,159	317,310	426,602	460,602
Saturated model	210,000	225,909	563,427	668,427
Independence model	2261,103	2263,224	2308,226	2322,226

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1,466	1,260	1,707	1,490
Saturated model	,986	,986	,986	1,061
Independence model	10,616	9,910	11,355	10,625

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	80	89
Independence model	11	12

Appendix 12.

Confirmatory Factor Analysis Output, 2nd iteration

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
easyapp	<---	Awareness	1,000				
noprobsapp	<---	Awareness	1,249	,088	14,224	***	
likeapp	<---	Awareness	1,178	,082	14,378	***	
mind	<---	Awareness	,934	,092	10,162	***	
likebrand	<---	Loyalty	1,000				
trustbrand	<---	Loyalty	1,043	,041	25,374	***	
preferbrand	<---	Loyalty	1,039	,069	14,968	***	
rec	<---	Loyalty	,927	,047	19,776	***	
supstaff	<---	CustomerService	1,000				
solveprobs	<---	CustomerService	1,024	,080	12,800	***	
pricesat	<---	PerceivedValue	1,000				
promo	<---	PerceivedValue	,969	,130	7,458	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
easyapp	<---	Awareness	,828
noprobsapp	<---	Awareness	,843
likeapp	<---	Awareness	,850
mind	<---	Awareness	,654
likebrand	<---	Loyalty	,948
trustbrand	<---	Loyalty	,926
preferbrand	<---	Loyalty	,752
rec	<---	Loyalty	,851

			Estimate
supstaff	<---	CustomerService	,935
solveprobs	<---	CustomerService	,899
pricesat	<---	PerceivedValue	,785
promo	<---	PerceivedValue	,760

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CustomerService	<-->	PerceivedValue	,339	,077	4,379	***	
Loyalty	<-->	PerceivedValue	,492	,083	5,939	***	
Awareness	<-->	PerceivedValue	,325	,061	5,318	***	
Loyalty	<-->	CustomerService	,500	,079	6,298	***	
Awareness	<-->	CustomerService	,332	,059	5,600	***	
Awareness	<-->	Loyalty	,512	,066	7,723	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	30	167,418	48	,000	3,488
Saturated model	78	,000	0		
Independence model	12	1943,007	66	,000	29,440

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,061	,886	,815	,545
Saturated model	,000	1,000		
Independence model	,525	,263	,129	,222

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,914	,882	,937	,913	,936
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,727	,665	,681
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	119,418	83,757	162,675
Saturated model	,000	,000	,000
Independence model	1877,007	1736,867	2024,509

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,786	,561	,393	,764
Saturated model	,000	,000	,000	,000
Independence model	9,122	8,812	8,154	9,505

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,108	,091	,126	,000
Independence model	,365	,351	,379	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	227,418	231,318	328,397	358,397
Saturated model	156,000	166,140	418,546	496,546
Independence model	1967,007	1968,567	2007,399	2019,399

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1,068	,900	1,271	1,086
Saturated model	,732	,732	,732	,780
Independence model	9,235	8,577	9,927	9,242

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	83	94
Independence model	10	11

Appendix 13.

Confirmatory Factor Analysis Output, 3rd iteration

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
easyapp	<---	AppPerception	1,000				
noprobsapp	<---	AppPerception	1,302	,092	14,086	***	
likeapp	<---	AppPerception	1,218	,087	14,082	***	
likebrand	<---	Loyalty	1,000				
trustbrand	<---	Loyalty	1,043	,041	25,445	***	
preferbrand	<---	Loyalty	1,037	,069	14,941	***	
rec	<---	Loyalty	,925	,047	19,724	***	
supstaff	<---	CustomerService	1,000				
solveprobs	<---	CustomerService	1,024	,081	12,683	***	
pricesat	<---	PerceivedValue	1,000				
promo	<---	PerceivedValue	,966	,130	7,461	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
easyapp	<---	AppPerception	,813
noprobsapp	<---	AppPerception	,862
likeapp	<---	AppPerception	,862
likebrand	<---	Loyalty	,949
trustbrand	<---	Loyalty	,926
preferbrand	<---	Loyalty	,751
rec	<---	Loyalty	,850

			Estimate
supstaff	<---	CustomerService	,935
solveprobs	<---	CustomerService	,900
pricesat	<---	PerceivedValue	,786
promo	<---	PerceivedValue	,759

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CustomerService	<-->	PerceivedValue	,339	,077	4,375	***	
Loyalty	<-->	PerceivedValue	,493	,083	5,948	***	
AppPerception	<-->	PerceivedValue	,313	,060	5,223	***	
Loyalty	<-->	CustomerService	,500	,079	6,293	***	
AppPerception	<-->	CustomerService	,309	,058	5,342	***	
AppPerception	<-->	Loyalty	,487	,065	7,503	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	123,872	38	,000	3,260
Saturated model	66	,000	0		
Independence model	11	1798,992	55	,000	32,709

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,047	,905	,835	,521
Saturated model	,000	1,000		
Independence model	,530	,278	,134	,232

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,931	,900	,951	,929	,951
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,691	,643	,657
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	85,872	55,916	123,438
Saturated model	,000	,000	,000
Independence model	1743,992	1609,169	1886,182

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,582	,403	,263	,580
Saturated model	,000	,000	,000	,000
Independence model	8,446	8,188	7,555	8,855

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,103	,083	,123	,000
Independence model	,386	,371	,401	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	179,872	183,215	274,119	302,119
Saturated model	132,000	139,881	354,154	420,154
Independence model	1820,992	1822,305	1858,017	1869,017

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	,844	,704	1,021	,860
Saturated model	,620	,620	,620	,657
Independence model	8,549	7,916	9,217	8,555

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	92	106
Independence model	9	10

Appendix 14.

Structural Equation Modelling Output

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Loyalty	<---	AppPerception	,728	,103	7,057	***	
Loyalty	<---	PerceivedValue	,261	,083	3,148	,002	
Loyalty	<---	CustomerService	,196	,061	3,237	,001	
easyapp	<---	AppPerception	1,000				
noprobsapp	<---	AppPerception	1,302	,092	14,086	***	
likeapp	<---	AppPerception	1,218	,087	14,082	***	
likebrand	<---	Loyalty	1,000				
trustbrand	<---	Loyalty	1,043	,041	25,445	***	
preferbrand	<---	Loyalty	1,037	,069	14,941	***	
rec	<---	Loyalty	,925	,047	19,724	***	
supstaff	<---	CustomerService	1,000				
solveprobs	<---	CustomerService	1,024	,081	12,683	***	
pricesat	<---	PerceivedValue	1,000				
promo	<---	PerceivedValue	,966	,130	7,461	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Loyalty	<---	AppPerception	,516
Loyalty	<---	PerceivedValue	,234
Loyalty	<---	CustomerService	,197
easyapp	<---	AppPerception	,813

			Estimate
noprobsapp	<---	AppPerception	,862
likeapp	<---	AppPerception	,862
likebrand	<---	Loyalty	,949
trustbrand	<---	Loyalty	,926
preferbrand	<---	Loyalty	,751
rec	<---	Loyalty	,850
supstaff	<---	CustomerService	,935
solveprobs	<---	CustomerService	,900
pricesat	<---	PerceivedValue	,786
promo	<---	PerceivedValue	,759

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
AppPerception	<-->	CustomerService	,309	,058	5,342	***	
CustomerService	<-->	PerceivedValue	,339	,077	4,375	***	
AppPerception	<-->	PerceivedValue	,313	,060	5,223	***	

Correlations: (Group number 1 - Default model)

			Estimate
AppPerception	<-->	CustomerService	,461
CustomerService	<-->	PerceivedValue	,399
AppPerception	<-->	PerceivedValue	,522

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
AppPerception	,474	,068	6,937	***	
CustomerService	,949	,123	7,740	***	
PerceivedValue	,760	,142	5,367	***	
e15	,363	,048	7,637	***	
e1	,244	,031	7,921	***	
e2	,278	,042	6,697	***	
e3	,244	,036	6,705	***	
e7	,105	,020	5,348	***	
e8	,170	,025	6,796	***	
e9	,787	,082	9,647	***	
e10	,312	,035	8,930	***	
e11	,137	,066	2,085	,037	
e12	,235	,071	3,299	***	
e13	,469	,100	4,687	***	
e14	,523	,097	5,372	***	

Matrices (Group number 1 - Default model)

Factor Score Weights (Group number 1 - Default model)

	promo	pricesat	solveprobs	supstaff	rec	preferbrand	trustbrand	likebrand	likeapp	noprobsapp	easyapp
PerceivedValue	,310	,358	,012	,021	,017	,008	,035	,055	,023	,022	,019
CustomerService	,005	,006	,329	,551	,006	,003	,012	,019	,007	,006	,005
AppPerception	,009	,010	,006	,010	,013	,006	,027	,042	,241	,226	,198
Loyalty	,011	,012	,009	,015	,132	,059	,273	,424	,022	,021	,018

Standardized Total Effects (Group number 1 - Default model)

	PerceivedValue	CustomerService	AppPerception	Loyalty
Loyalty	,234	,197	,516	,000

	PerceivedValue	CustomerService	AppPerception	Loyalty
promo	,759	,000	,000	,000
pricesat	,786	,000	,000	,000
solveprobs	,000	,900	,000	,000
supstaff	,000	,935	,000	,000
rec	,199	,167	,438	,850
preferbrand	,176	,148	,387	,751
trustbrand	,217	,182	,478	,926
likebrand	,222	,187	,489	,949
likeapp	,000	,000	,862	,000
noprobsapp	,000	,000	,862	,000
easyapp	,000	,000	,813	,000

Standardized Direct Effects (Group number 1 - Default model)

	PerceivedValue	CustomerService	AppPerception	Loyalty
Loyalty	,234	,197	,516	,000
promo	,759	,000	,000	,000
pricesat	,786	,000	,000	,000
solveprobs	,000	,900	,000	,000
supstaff	,000	,935	,000	,000
rec	,000	,000	,000	,850
preferbrand	,000	,000	,000	,751
trustbrand	,000	,000	,000	,926
likebrand	,000	,000	,000	,949
likeapp	,000	,000	,862	,000
noprobsapp	,000	,000	,862	,000
easyapp	,000	,000	,813	,000

Standardized Indirect Effects (Group number 1 - Default model)

	PerceivedValue	CustomerService	AppPerception	Loyalty
Loyalty	,000	,000	,000	,000
promo	,000	,000	,000	,000
pricesat	,000	,000	,000	,000
solveprobs	,000	,000	,000	,000
supstaff	,000	,000	,000	,000
rec	,199	,167	,438	,000
preferbrand	,176	,148	,387	,000
trustbrand	,217	,182	,478	,000
likebrand	,222	,187	,489	,000
likeapp	,000	,000	,000	,000
noprobsapp	,000	,000	,000	,000
easyapp	,000	,000	,000	,000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	123,872	38	,000	3,260

Model	NPAR	CMIN	DF	P	CMIN/DF
Saturated model	66	,000	0		
Independence model	11	1798,992	55	,000	32,709

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,047	,905	,835	,521
Saturated model	,000	1,000		
Independence model	,530	,278	,134	,232

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,931	,900	,951	,929	,951
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,691	,643	,657
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	85,872	55,916	123,438
Saturated model	,000	,000	,000
Independence model	1743,992	1609,169	1886,182

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,582	,403	,263	,580
Saturated model	,000	,000	,000	,000
Independence model	8,446	8,188	7,555	8,855

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,103	,083	,123	,000
Independence model	,386	,371	,401	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	179,872	183,215	274,119	302,119
Saturated model	132,000	139,881	354,154	420,154
Independence model	1820,992	1822,305	1858,017	1869,017

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	,844	,704	1,021	,860
Saturated model	,620	,620	,620	,657
Independence model	8,549	7,916	9,217	8,555

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	92	106
Independence model	9	10