

Thesis of the PhD dissertation

THE EXAMINATION OF ONLINE CONSUMER BEHAVIOUR IN FOOD INDUSTRY

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1. BACKGROUND, OBJECTIVES AND HYPOTHESES OF THE RESEARCH

At the beginning of the 1990s, Tim Berners-Lee set off the World Wide Web from CERN, Switzerland, with the aim of creating a kind of writable- readable medium. In my opinion, he himself was not aware of the fact either, that his foundation became so influential during the last three decades. Nowadays, life would be impossible without the Internet, which can be seen in social and economical processes as well.

Today, community view of thinking became the most important element of the online presence, which inevitably influences the members of the Internet as well. This view arrived to Hungary too, however with a few years delay. Its presence is evident, but the spreading is not so fast as in the USA or in the Western-European regions.

The tendencies mentioned above have serious influences on our local food industry as well. This raises the question whether the particular members of this industry are aware of current tendencies, or they can use the its hidden possibilities. In our local food industry – at the company level – there are two ways of judging the possibilities of the online marketing applications. The smaller companies, especially the small and medium ones remain far from them, since they have serious doubts with online presence, and marketing activities. But due to their integrated marketing communication, the larger ones win wider and wider field for the online presence. The previous tendencies are unequivocally true for the three major segments of our local food industry: milk, poultry and meat. In my further research I will examine them in details, measure the online presence of the companies together with their activities and the relationship with the consumers.

The past of health and its social influence go back to hundreds of years. Thanks to the modern Medical Science, today it is much easier to become and keep ourselves healthy, however not many people can say so. This tendency can be rooted on chronic illnesses and unhealthy lifestyle. The ruling and changing of our health state is our responsibility. This is why the case of *health-behaviour* is highly important, whose *main point is food-consuming*, a very strict part of the process where consumers change themselves for a healthier lifestyle. At this point we can ask that how can one gather information in the most effective way? Before the Millenium there were *four ways to get it*: books and newspapers, the advice of relatives and friends, visitations at the doctor's or dietitian's or relying on one's previous studies. But our world is changing radically, and during the last

decade it went through a kind of digital evolution. Due to it, the sources of information mentioned above broadened with a fourth element, namely the Internet. One of the main tasks for gaining a healthy lifestyle is a well organised nutrition. We need quite a lot information, in order to be able to choose from different types of food, and create a proper diet for ourselves. It will help us to turn towards a healthier lifestyle and sustain it. Based on these facts, we can ask the following questions: Is mapping the positive health influence of food an important action during the online information gathering? Can it be more important than the average desire of getting information about price and quality? Is there a parallel between the online orientation and offline ways of shopping regarding particular types of food? I will prove the relevancy of the local appearance of the so-called digital food-consumer through my related research with examining the tendencies. During the analysis, I won't narrow the circle for dairy products and meat – as I did it previously – but I handle the information searching activity and the ways of shopping as a whole.

In the *first Figure* I demonstrate the main core of my research. My aim is to introduce the construction of the particular parts and the logical connection between them. This schematic diagram will be widened later, and transformed as a complex research model by the end of the thesis.

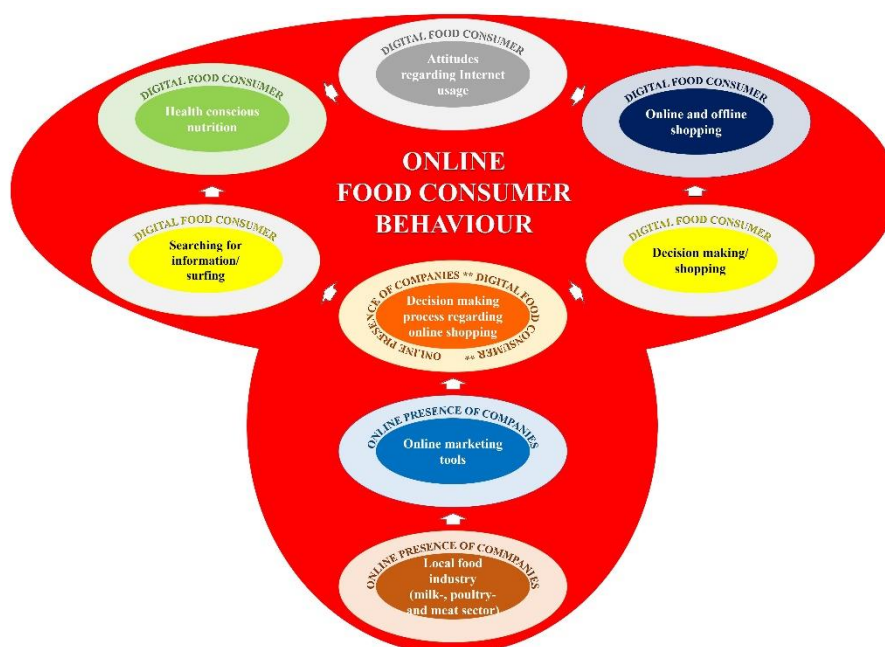


Figure 1: The construction of the specific parts of the thesis, and the logical relationship between them

Source: own edition, 2016

1.1. Main objectives of the research

- O1:** The mapping of the online marketing role in the consumer- and company communication, based on the global and local tendencies.
- O2:** The systematisation of the national and international professional literature covering the progress of the online consumer behaviour.
- O3:** Defining and differentiating the attitude of local population towards internet usage.
- O4:** Assessing the online behaviour of the members of the local milk-, poultry- and meat industry.
- O5:** The mapping of the online food consumer behaviour depending on information gathering and shopping.

1.2. Basic hypothesis of the research

The online appearance of the local milk- and meat processing micro-, small and medium companies is rather bare (eg.: official website, social media site), so they are not really able to maintain the online information gathering and shopping demands of the Hungarian digital food-consumers. Without this active part taking, consumers cannot be involved into the company processes, in spite of the fact that food related searching for information and the eventual shopping are key elements in the willing for turning consumers' lifestyle towards a healthier way.

1.3. Hypotheses of the research

- H1:** The mapping of the process of online consumer behaviour, especially the food related information gathering and shopping preferences, which has not happened in Hungary yet.
- H2:** The local population can be divided into well-differential groups on the basis of perceived usage, usefulness and barriers regarding the Internet technology.
- H3:** The local milk-, poultry- and meat processing micro-, small and medium companies are not aware of the possibilities provided by online marketing (they think that their own official website is useless, and they use the possibilities given by social media in a minimal way).

- H4:** In the local milk-, poultry- and meat processing industry the online consumer involvement into the company processes happens in a rather minimal way.
- H5:** The online searching for information is a main part of the consumers' changing process for a healthier lifestyle.
- H6:** Nowadays it is expected from a food-industrial company to be present, active and interactive in the online platforms.
- H7:** There is a group of the digital food-consumers in Hungary whose members mainly get information and occasionally do the shopping online.

2. PRESENTATION OF THE DATABASE AND THE APPLIED METHODS

We used two main methods of marketing research in the whole dissertation: the primary and secondary ones. During the secondary data and information gathering, I collect and arrange those data that I have already owned. The theoretical background of my research was built upon relevant professional overviews, where I used the results of national and international works. During our primary data collecting we made quantitative research, which was based on the analyses of our secondary one. First of all, we organised a *national representative questionnaire survey with 1000 samples (QU1)*. It helped me to differentiate the population according to the attitudes towards the internet usage. At the same time we started our *company observation project (OB)*, where we analysed the online appearance of the members in the local milk-, poultry- and meat industry with the help of an observation sheet, based on the database of NÉBIH (National Food Protecting Office). Last but not least, I analysed the significant group from the previous representative research in details with *an online representative survey with 305 samples (QU2)*. The main viewpoint was the online food consumer attitudes.

2.1. Secondary Data and Information collecting

During the secondary Data and Information collecting process I gathered, arranged and analysed the relevant national and international publications appeared in the topic. My main aim was to make a proper basis for the primary data collecting. Among the secondary data, I interpreted the numbers transmitted in long term timelines, and I mean text-based professional writings under secondary information. I wanted to work with the most recent data during the whole collecting process, and with the secondary gathering I examined my particular aims and hypothesis. I analysed FAO, EUROSTAT, OECD and KSH databases for looking at statistical tendencies, and I used the most important results of a great among of actual research reports and studies. I collected international works mostly with the help of online databases (e.g.: SCIENCE DIRECT, SCOPUS and EBSCO), and for analysing the national works I used different searching pages as well (e.g.: GOOLGE SCHOLAR, MATARKA). I also took a deeper look into the recent dissertations and PhD thesis written in the topic, which I was able to get information to make a basis for the models used in our primary research. When making the professional

overview my main aim was to elaborate those resources that came out in a form of books or newspapers, and during my whole research work I tried to find the printed form of my resources.

2.2. National representative questionnaire survey with 1000 samples (QU1)

In the quantitative research we organised a questionnaire survey first. The national one was made by “Szocio-Gráf Piackutató Intézet Kft.”, in the first half of the year 2014, involving 1000 persons. It contained four question parts.

We examined the Internet regarding attitude of the local population with the help of the *Technology Acceptance Model – TAM*. The respondents rated 18 statements of the model in a Likert-scale ranged from 1 to 5, where 1 meant 'not agree at all' and 5 meant 'absolutely agree'. Our 18 statements were translated into Hungarian from the original ones of KOUFARIS (2003) and PORTER & DONTUE (2006) research, and they were adapted for differentiate the Internet using attitudes. As I previously demonstrated, the TAM-model is the most accepted research method examining the acceptance of particular technologies, that was modified and widened with relevant factors several times. Among the large range of media-technological approaches *KOUFARIS (2003) examined the online consumer behaviour and the online shopping*, whereas *PORTER and DONTUE (2006) did so with Internet usage*. Based on my previous research, this model was not examined in Hungary from the viewpoint of the differences in Internet usage yet. According to my assumption, with the examined statements and the socio-demographic analysis of our pattern, the TAM-model is suitable for making a gap-filling research in the field of the differences in the local internet usage.

I examined the food related information gathering in two aspects. The starting point was JEPSEN's (2007) *Internet Information Seeking Model (ISM)*. I adapted the elements of the *Use of the Internet for information search* as it became suitable for analysing food related information gathering. I wanted to know that how respondents get information online and offline before making a shopping decision. Then I assessed the role of the information sources given by the ISM-model in the different searching activities. The variable of *the amount of use* was asked in an unchanged form, adjusted to the internet

usage. Other elements of the ISM model were applied in our other questionnaire survey (QU2), but it will be presented later.

During the *survey*, in the case of the particular regional and settlement types the *representative way was already given*, so their structure was absolutely suitable for the previously stated quote by KSH. In each region, we used the method of *random walking*, that proves an absolute coincidence in selecting the proper respondents (namely we gave an equal chance for everyone to get into the survey). We used the so-called *birthday key* method in order to choose the interviewed person from the members of the household. It means that during the questionnaire, we asked for those who are over 18 years. Secondly we chose the one whose birthday was the closest to the day of the survey (namely whose birthday was celebrated last). With this method we were able to provide the total random way in the second round as well. *The unintentional error is $\pm 1,9\%$ - $3,2\%$* . Last but not least we corrected the pattern with a *multi-dimensional loading* (based on gender and age), so *the pattern reflects the consistency of the population on the basis of four factors (region, regional type, gender and age)*.

2.3. The observation of milk-, poultry- and meat processing companies (OB)

Our quantitative research was started with a describing method, namely the observing one. We made a *structural observation*, where we selected the *methodology of content analysis*, based on a previously created and numerated observation sheet.

The basis of our analysis was the *database of NÉBIH* (2015.05.12), collecting those Hungarian companies that *own permitted processing factories*. Since involving all the local food sectors would have been impossible, the milk-, poultry- and meat processing ones were selected, and the members of the poultry- and meat sector were treated as one. We made an overall analysis in the pointed segments, which means that we observed each and every processing company that satisfied the conditions of the database. In my *Literature review* I examined the selected sectors in details, proving their importance. The milk- (88 companies), poultry-and meat ones (214 companies) were *filtered for factory types and processed species*. It is well seen that in local milk industry – likely because the complexity of tasks – there are less processing companies than in poultry-and meat sectors. Then we collected the most important statistical data in connection with the

selected companies. We could reach public information in the system of Ministry of Justice, where we collected *the net benefit and the average statistical headcount of 2014*. So, we were able to estimate the *size of the companies* (large-, medium-, small-, micro). After finalising the database, we created an observation sheet, which we analysed the online appearance of the chosen ones with, taking four main viewpoints into consideration: official website, social media website, applied online tools, involvement of consumers and the rate of interactivity. For shaping the sheet, I took online marketing professionals as a basis.

2.4. The online representative survey with 305 samples (QU2)

In the third step of our quantitative research we made an *online representative survey with 305 samples* in the fall of 2015.

The method of the online survey can be rooted in several factors. The topic and aims of my research demanded a quantitative way in a pattern, whose members are likely to be active Internet users, and the online platforms are essential in their everyday life. My *main objective* was to adjust this survey to my previous literal researches and our national representative questionnaire survey (QU1), where I differentiated five well-divided groups during the examination of the Internet related attitudes of the local population. The group of "*expert internet users*" can be separated the most, so I take the age-related criteria as a basis from its socio-demographic features.

The *elements of the pattern* were chosen with the help of a filtering question, so the members of the final pattern were *the representatives of the Generation Y (between 20 and 35)*, who have already been a majority in QU1 survey as well in comparison with other age groups. The online questionnaire were spread with the *snowball method* in Facebook. We provided the related link for the respondents, and they could send it forward to their acquaintances as well. 360 questionnaires were filled in altogether, but *after the data cleaning*, 305 ones remained. Finally the pattern were loaded in order to provide representativeness, so *it reflects the basic crowd on the basis of gender and state of living*. If I say basic crowd, I mean the segment of "expert internet users" as it was given by the results of our QU1 survey.

During this survey we examined only two variables of the *Internet Information Search Model (ISM)* created by JEPSEN (2007) (*using the Internet for information searching (I.) and the rate of usage (V.)*). In our online survey (QU2) we wanted to adapt the whole ISM model and widened the variables in order to make food related information searching measurable too.

For making the ISM related statements and questions more understandable, I divided them into two:

- In the field of *food information gathering*, I took into consideration the following variables: the usage of the Internet for information searching (I.), the availability of information (VI.) and the expected costs of searching on the Internet (VII.).
- *In the features of the traditional (offline) and Internet related (online) ways of shopping – applicable for all types of products, not only for food – there were three variables, whose statements took part in the survey: the experience of shopping (VIII.), the relationship with the staff (IX.) and the stay-at-home customer (X.)*.

It was important to amend the judgement related statements of the ISM model with the relevant sections of *Online Consumer Style Inventory (O-CSI)*. It was created by SAM and CHATWIN (2015), and they have 20 statements in their model that are suitable for examining the online consumer behaviour. The first twelve elements are connected to the online consuming decisions, whereas the remaining eight are for the online shopping environment. During QU2 survey I selected two from the remaining eight above for amending the ISM elements (deleting one and adding a new one): *the consumer examining the website content primarily (VI.) and the consumer examining the website design primarily (VII.)*.

After filling in the questionnaires and finalising the pattern, the results became downloadable from an online database and importable for the SPSS mathematical-statistical software, where we received the database to evaluate.

2.5. Data evaluation

In this chapter I present the data evaluation methodology of the particular quantitative researches, where I point the related research in each and every segment:

- National representative questionnaire survey with 1000 samples were introduced (QU1)
- The professional observation of the online activities of 88 milk processing and 214 beef-, poultry- and pork processing companies (OB)
- online representative survey with 305 samples (QU2)

The missing values of the *questionnaire based databases (QU1 and QU2)* – in case the respondent did not fill in the related field – were substituted by the particular (pattern)-median. But the rate of the missing values remained under 5% in each case.

During evaluation, apart from the describing statistics, I made consistence examinations of two- and multi- variables.

In processing our quantitative researches (QU1, OB and QU2) I applied *distributional relations, arithmetic average, modus, median, standard deviation, bias and interquatile extent*. When analysing the data I demonstrated the sample population related distribution. The majority of the variables were *nominal and ordinal* levelled in each and every research of us, and among the background variables I applied the *relation* scale as well (e.g.: age, term of internet usage). The measuring levels define the applicable ways of analysis as well. For examining the relationship of two categorised variables (in nominal scaled questions) I used Chi²-test during my cross-chart analyses.

Because of the nature of the ordinal questions, we decided to apply a non parametric method. For those that of two categories, I made a *Mann-Whitney test*, whereas for the three or more related ones I used the *Kruskal-Wallis analysis*.

First I used various types of statistical methods and cross-chart analyses, then I made a factor- and cluster analysis for QU1 and QU2 researches. They made our examinations proper for creating relevant segments. Its methodological steps will be consulted later in details.

First I decided whether my list of statements are suitable for a *factor-analysis*. Then I defined the rate of *Cronbach's Alfa* index. In the factor analysis of my QU1 survey I

applied the *Maximum-likelihood* method, together with the ones of Principal component and Principal axis factoring. Nevertheless I received almost the same results as in Maximum-likelihood, so I stayed at the latter analysis. In the case of QU2, I decided to use the *Main component analysis*. Before creating the factors I observed the correlation between the particular variables. Since I worked with classified ones, I applied the *correlation by Spearman*, which seemed to be an important condition during my factor analysis. With the *antimage-matrix*, I examined the related MSA-values, and I got higher than 0.5 for each variable. So none of them should have been locked out. Finally I made the *Bartlett-test*, and counted the *Kaiser-Meyer-Olkin (KMO)* rate as well. From the test I was able to conclude a strong correlation between the variables. The rate of the KMO exceeded the 0.5 basis. To sum up we can say that the presence and significance of correlation, the optimal MSA-, KMO rates and the significant Bartlett -test proved that the variables are suitable for the factor analysis.

When *defining the number of factors*, first I took the *Kaiser criteria* into consideration. It says that the own rate of the factors (Eigenvalue) should be at least one. Then I tested this number with the *variance-rate method* as well, with the criteria of 60% of the thumb-rule already accepted in social science. With the help of the *Scree-test (elbow-rule)* I could also observe the distribution of the factors graphically on the scree plot diagram. I rotated the factor load matrix with the *Varimax method*, so I received the best factor loads, whose extent did not pass below the 0.5 level. With the previous methods I was able to strengthen the final number of factors from various viewpoints.

During the factor analysis I could define some dimensions representing the differences in Internet usage among local population. After finalising the factors, I counted a Cronbach's Alpha value for a reliable analysis of the factoring groups, which showed the inner consistency of the created dimensions.

When finished the factor analysis, I segmented the respondents with the help of a cluster analysis, based on the previously created factors, and I arranged them into relatively homogeneous groups. The elements belonging to each cluster are similar, but different from the elements of the others. In the case of cluster analyses it is wise to build the hierarchic and non-hierarchic methods on each other. First I used the *process by Ward*, which directed me towards the number of clusters, but analysing the dendogram was also

helpful. Secondly, due to the high number of sample elements, I applied the *K-means (K-central) method* in both surveys. In the cluster analysis we paid extra attention for the *F factors*, since I could separate the relatively homogeneous groups with them. The significant differences between the examined clusters, factors and socio-demographic variables were analysed with *cross-chart methods (Chi²-test)*, *tests for rang-average (Mann-Whitney- and Kruskal-Wallis tests)* and *variance analysis*, however their result only highlighted that there is a difference between the average rate of categories.

3. MAIN STATEMENTS OF THE THESIS

In this chapter I present the main conclusions connected to the objectives and hypotheses of the primary and secondary surveys in the dissertation. Then I deal with the main restrictions as well, so I can define the future research directions.

In analysing the main definitions, my aim is to find the correlation between the results of the particular primary researches. It is important to emphasise that – as I have already introduced in the methodological part – the QU1 and QU2 surveys were absolutely built on each other. Some questions were examined in both ones, but some of the samples were different.

O1 objective: *Mapping the role of the online marketing in the consumer and company related communication, based on global and local tendencies.*

I did not assign an own hypothesis for the examination of this objective, but for establishing the topic I must have dealt with the first aim in details, which was carried out by secondary researches.

I compared and analysed the traditional and the new communicational model. In the case of the latter I proved that nowadays the basis of communication is an interactive and community-based view that is needed to be adapted by the companies if they want to address their consumers effectively. I defined the features of the local Internet penetration globally and in comparison with the EU members. Moreover I estimated the generations that can be differentiated in the field of Internet usage, and the Generation Y became more and more important in my research – the members of the "expert internet user" segment in our *QU1 survey* were mostly from this age group. Based on this fact I established my *QU2 survey* on this generation exclusively. Further I defined the major tendencies of the online presence of the local companies with the help of an international comparison. Then I collected the main features of those online marketing tools that can be used by the companies, and I analysed the pay-off possibilities after their application. Last but not least, before examining the online consumer behaviour in details, I mapped the attitudes of the most important member of the process: the online consumer.

O2 objective: *Arranging the national and international literature that deal with the process of the online consumer behaviour.*

Processing this topic literally is quite rare in Hungary. During the secondary surveys I met only a few literature that examined the topic in its complexity. So I took a deeper look at the online adaptation of the five-step way of traditional shopping decisions, and I put the emphasis on the information searching and/or surfing process, together with the decision making/shopping phases. When I mapped the phases mentioned above, I wanted to highlight the preferences in connection with food-consuming. During the examination I represented some models in details that created the core of our primary researches (Technology Acceptance Model (TAM), Information Search Model (ISM) and Online Consumer Style inventory (O-CSI)). Based on these, ***I proved my H1 Hypothesis.***

O3 objective: *Defining and differentiating the attitude of the local population regarding Internet usage.*

First I analysed the theoretical background of Technology Acceptance Model (TAM), then I adapted its elements for measuring the attitudes of Internet using activities among the national population. We did it formally with a national representative questionnaire survey of 1000 samples (QU1). If I am not mistaken, the TAM-model has not been applied in Hungary for such researches yet. After analysing the 18 statements of the model I divided three dimensions with the method of factor analysis (F1_{QU1} – perceived usage; F2_{QU1} – perceived usefulness; F3_{QU1} – perceived barriers). After comparing the factors with socio-demographic variables I made a cluster analysis, and received five, well-differentiated segments (C1_{QU1} – "rising remains", C2_{QU1} – "deprived Alphas"; C3_{QU1} – "sceptical remains"; C4_{QU1} – "expert internet users"; C5_{QU1} – "aging powerless"). The main role of the "expert internet users" is proven by the fact that their rate is about the half of the whole pattern, its members are mostly from the Generation Y, and they had an extreme rating regarding the perceived usage and usefulness of the Internet. On the *2nd Figure* I present the clusters made on the basis of the Internet using of the local population, and of the created factors. Because of these facts I can say that my ***H2 hypothesis is proven too.***

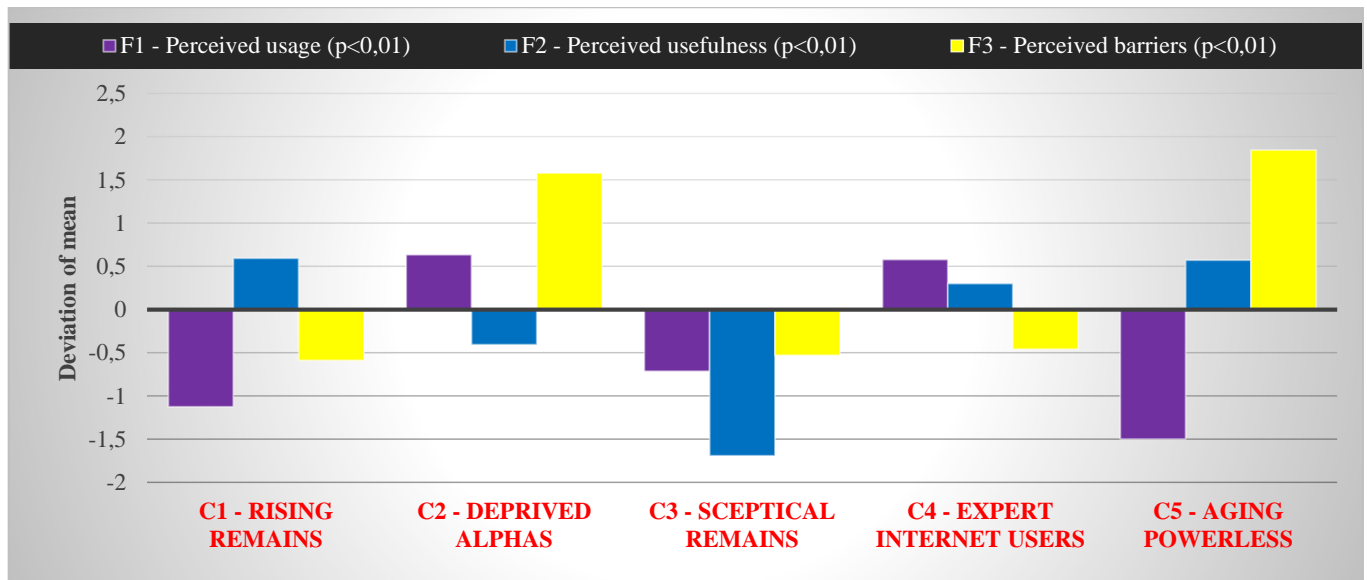


Figure 2: Clusters based on the Internet usage of the local population, and defined on the basis of the created factors; N=1000

Source: Own editing based on QUI, 2016

O4 objective: *Estimating the online behaviour of the members of the national milk-, poultry- and meat processing industry.*

First of all I analysed the importance of milk-, poultry- and meat industry among the local food-industrial sectors. I made it with the help of several literal sources of literature. Thus I could prove the reason why I chose these segments for my professional observation. As far as I know, before our research there were no such widespread examination that focused on especially the online activities of the local food industry. 88 milk and 214 poultry- and meat processing companies were involved in the research, and they all possess NÉBIH permitted processing factories. It is important to mention that during our examinations we handled the poultry- and meat sectors together. When we surveyed the ownership of an official website, it turned out that almost every 2nd company has an online availability, and it can be paralleled with the official KSH statistics. The size is the main influencing factor of the refreshment frequency of the website, since in the case of medium and large companies there were a much higher rate of the existence of a more frequently updated one, whereas in the case of micro companies the tendency was the opposite.

The 23.1% of the milk processors, and the 16.8% of the meat ones provide a personal online platform for the users. The interactivity of the web pages was observed in a Likert-

scale in a 1 to 5 scale (*see the 3rd Figure*), and I received an extremely low rate of 2. I could conclude from this result that users have an opportunity at a minimum level for leaving comments, and if so, it can be mostly via e-mail.

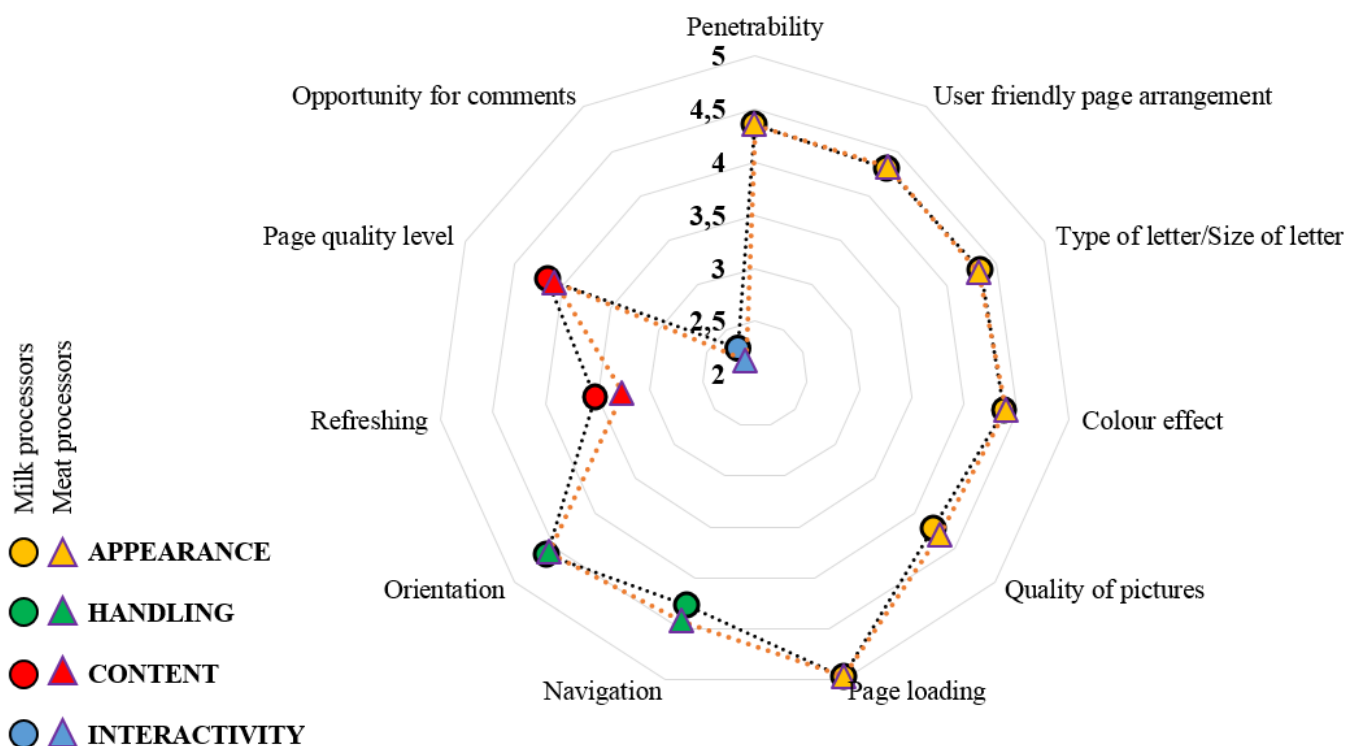


Figure 3: Comparing examination of the official website features

Source: Own editing based on OB, 2016

Third of the related milk- and meat processors have Facebook account. In the examined sectors, every second company refreshes its timeline or adds new entries less often than monthly, which is an extremely low tendency. Based on the results I can say that these processing companies have exclusively Facebook accounts among the types of social media, and they are quite passive either. Less than 5% of the members of observed sectors have blogs or Youtube channels. Due to the previous tendencies I unequivocally ***proved my H3 hypothesis.***

With the previous observation we took into consideration the methods and tools given for the examined companies in order to judge the involvement of the consumers into the company processes. The rate of this involvement was observed in a Linert-scale in a 1 to 5 scale, and I received disillusive and regrettable results. The value was 1.93 in the case of milk processors having website and/or Facebook account, whereas it was 1.69 for the meat processor ones. The results strengthen my assumption that the local companies in the

related sectors are not eager at all, or only in a minimum rate to involve consumers into the company processes. Based on these facts, my ***H4 hypothesis was proven.***

O5 objective: *Mapping of the online food consumer behaviour depending on information searching and shopping.*

During my literature overview I proved with several researches that the different types of online tools become more and more relevant and authentic sources of information for the consumers who want to be informed about health and food. The conscious turning of the lifestyle into a healthy way is becoming quite important for consumers nowadays, so creating the proper nutrition is inevitable for it, which can only be happened with an accurate orientation. Today these efforts can be maintained by online tools very effectively.

In our *QU2 online survey involving 305 samples* we examined the tendencies of the traditional (offline) and internet-based (online) shopping and gathering information only with 36 statements. The respondents esteemed with a Likert-scale from 1 to 5 where 1 meant not typical at all, whereas 5 meant absolutely typical categories. When analysing the statement it was highlighted that searching for information about the positive effects of food for health (median= 4.00; average value= 3.99; bias= -0.720) is much more important than price (median= 3.00; average value= 2.74; bias= 0.249) or quality (median= 3.00; average value= 3.00; bias= -0.021). I made a factor- and cluster analysis from the statements above, based on the preferences of the "expert internet users" emerged from the *QU1 survey*, but I will present the results in details on the examination of the *H7 hypothesis*. Currently I can highlight the dimension of the "internet-based information searching for food" (F3_{QU2}), whose extremely high factorised elements can be explained by the fact that the respondents usually get useful information about food, and it is important for them to get more details about the positive health effect of them. The previous preferences well characterise the so-called "digital food-consumers" (C5_{QU2}), who were separated during the cluster analysis. The internet-based orientation about positive health effects is much more important for them than for any other segment examined. Thus ***I can prove my H5 hypothesis.***

When examining the **H6 hypothesis** it is worth referencing back for the evaluation of the *H5 hypothesis*, since their literary tendencies are similar. So the food related online surfing is becoming more and more preferable for consumers. The search pages (e.g.: Google) are quite popular if we talk about information gathering. But as I have already mentioned, they are only temporary platforms and are not suitable for creating an interactive connection with users. Social types of media, especially social network sites (e.g.: Facebook) were founded on the basis of interactive communication. Nowadays, it is essential for consumers that a company – food industrial or not – represents itself in at least one of the social media.

Let's take a look at the results of both surveys. In the case of QU1 it appeared (*Table 1*) that for the 17.8% of the population it is evident to get information through social media sites. This rate is the most popular source of information among the examined ones, if we do not take search pages (30.3) into account. The "expert internet users" and the "deprived alphas" highly prefer social media sites.

Table 1: Distribution of online tools in the food-related information searching among the local population (N=1000)

Possible answers	Capita	%
Search pages	303	30,3
Social media sites	178	17,8
Concrete websites in connection with the regarding product	168	16,8
Pages about news	156	15,6
The website of the manufacturer	143	14,3
The website of the trader	141	14,1
User blogs and forums	115	11,5
Company blogs and forums	35	3,5

Source: Own editing based on QU1, 2016

In QU2 survey (*Table 2*) I received much higher distributions regarding the social media sites (41.0%), but it can be derived from the content of the pattern of course. This rate was only passed by the user blogs/forums (45.2%) and trader websites (42.6%).

To sum up the above facts we can say that our **H6 hypothesis** – like previously – **was proven**.

Table 2: Distribution of online tools in the food-related information searching among the "expert internet users" (N=305)

Possible answers	Capita	%
User blogs and forums	138	45,2
The website of the trader	130	42,6
Social media sites	125	41,0
Concrete websites in connection with the regarding product	109	35,7
The website of the manufacturer	94	30,8
Pages about news	87	28,5
None of them	41	13,4
Company blogs and forums	21	6,9

Source: Own editing based on QU2, 2016

For analysing the **H7 hypothesis** it is worth emphasising that – as I have already referred to it in H5- and H6 ones – the tool of information gathering is continuously shifting for the online platform from the traditional sources of information. This is because the fact that the online tools are continuously innovated, and they raised the ways of searching in a quite new dimension. The online food shopping is at a minimum level in Hungary yet, but looking at the tendencies of the countries owning a developed internet economy, there can be a serious breakthrough within the next few years.

With the results of the *QUI national representative survey* I defined that every 4th local citizen (approx. 25%) searches on the different online platforms before food shopping, and this action takes similar or more time than doing it via the traditional sources (*Table 3*).

Table 3: The time spent for food-related online and offline information searching among the local population (N=1000)

Possible answers	Capita	%
I spend a lot of time with offline searching	571	57,1
I spend relatively more time with offline searching	146	14,6
I spend equal time with online and offline searching	185	18,5
I spend relatively more time with online searching	41	4,1
I spend a lot of time with online searching	12	1,2
Don't know/No response	45	4,5

Source: Own editing based on QU1, 2016

Internet based searching is more typical among the members of younger generations than elder ones, and this is proven by the fact that during the cluster analysis the "deprived Alphas" (mostly the Generation Z) and the "expert internet users" (mostly the Generation Y) received the highest mean ranks in the differentiated segments (*Figure 4*).

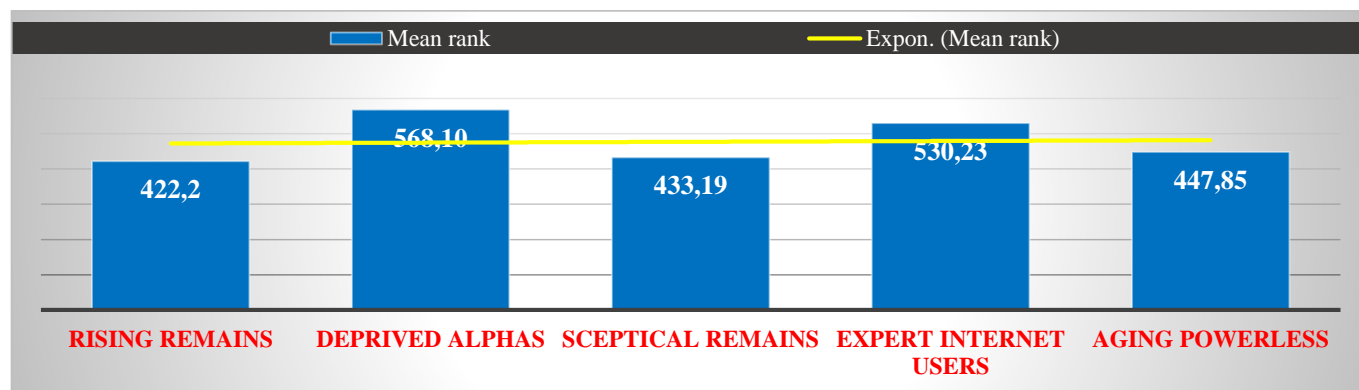


Figure 4: Time spent with food-related online and offline information searching among the local population, based on the differentiated clusters in connection with their internet using attitudes; N=1000 (Chi²=42,728; df=4; p<0,01)

Source: Own editing based on QU1, 2016

In case of our QU2 survey, it is only the members of the Generation Y that we could work with, whose 61% think that the online platforms are as important as, or more important than the traditional ones if we want to search for food-related information (*Table 4*).

Table 4: Time spent with food-related online and offline information searching among the "expert internet users" (N=305)

Possible answers	Capita	%
I spend a lot of time with offline searching	32	10,5
I spend relatively more time with offline searching	63	20,7
I spend equal time with online and offline searching	77	25,2
I spend relatively more time with online searching	87	28,5
I spend a lot of time with online searching	23	7,5
Don't know/No response	23	7,5

Source: Own editing based on QU2, 2016

We can claim that for the members of the Generation Y – who perfectly represent the group of "expert internet users" – the Internet based information gathering is three times as important than it is for the local population. Based on the further results of QU2 we can say that 38% of the respondents has already bought food via the Internet (we involved web-based food ordering into this category, as no other researches excludes this factor either). Based on the mean ranks I can say that in the case of these customers, the traditional ways are still important in the information gathering action, but online ones can be observed in more and more cases. It is proven that for the web-shoppers of the near future it will be more crucial to get proper information via the online platforms. The online sources of information will have a serious role for those who reject the online way of shopping as well, but in this case we can rather talk about information-consuming.

When evaluating the *H5 hypothesis*, I mentioned that during the examination of our QU2 survey I made factor-and cluster analyses as well. Based on the Information Search Model (ISM) and the Online Consumer Style Inventory (O-CSI) I adapted 36 statements for mapping the tendencies of offline and online web-shopping together with food-related information searching, based on the features of the "expert internet users". The particular statements were compared to the socio-demographic variables with a Mann-Whitney and a Kruskal-Wallis test. After making the factor-analysis, 19 statements remained, so I separated them into six dimensions (F1_{QU2} – the advantages of online shopping; F2_{QU2} – traditional shopping experience; F3_{QU2} – food-related information searching on the Internet; F4_{QU2} – relationship with the staff; F5_{QU2} – reliability of online shopping; F6_{QU2} – traditional way of food-related information searching).

After analysing the factors with background variables, I made the cluster analysis differentiated by the "expert internet users". I created five well-differentiated segments (C1_{QU2} – „unconscious passives”; C2_{QU2} – „conscious traditionalists”; C3_{QU2} – „home digitalists”; C4_{QU2} – „complex actives”; C5_{QU2} – „digital food-consumers”). In *Figure 5* I represent the clusters defined by the created factors about the offline- online shopping and the food -related information gathering among "expert internet users".

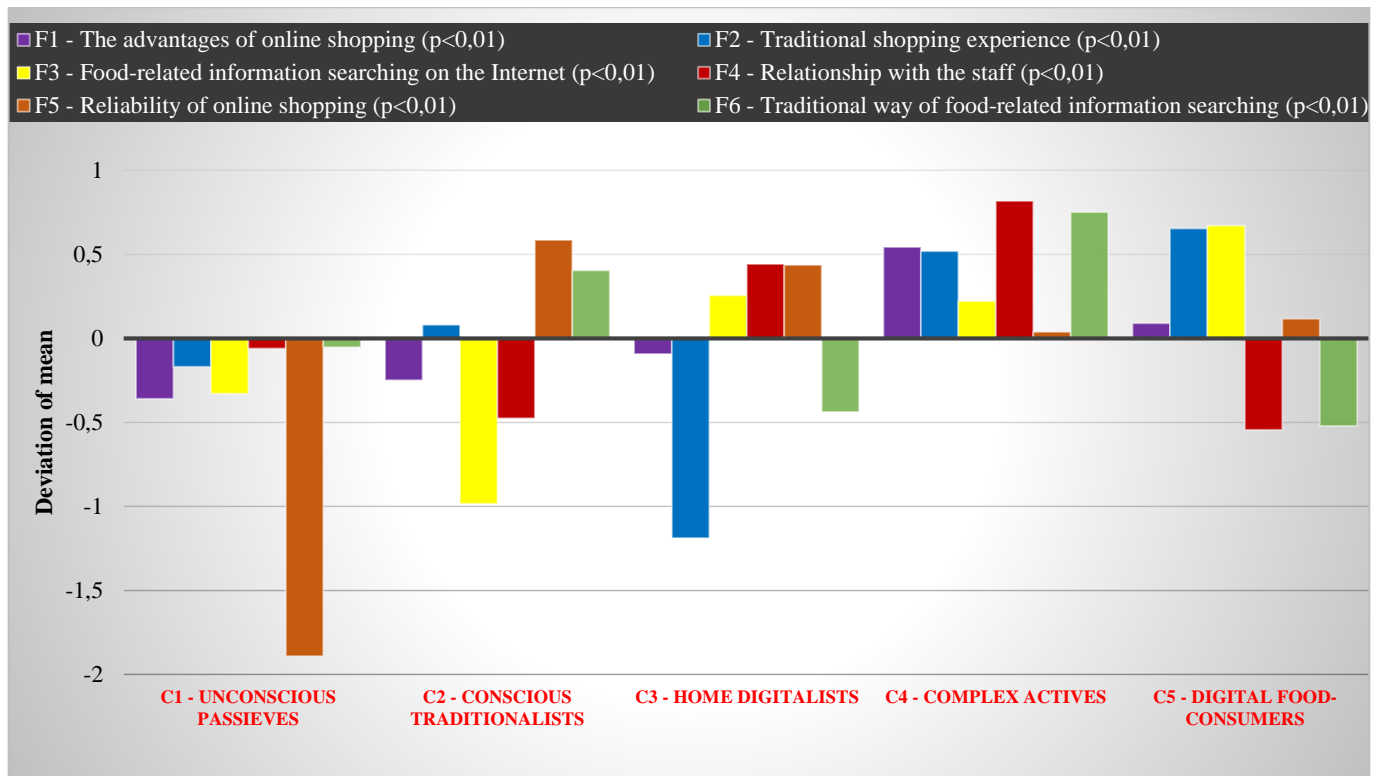


Figure 5: The clusters defined by the created factors about the offline- online shopping and the food -related information gathering among "expert internet users"; N=305

Source: Own editing based on QU2, 2016

Based on the above we can say that in a small pattern (305 samples), but minding the relevant statistical methods in a maximum way, I could define groups of consumers who – based on their features and content – represent the information search and the offline and online shopping in a quite new way. So we can say that my *H7 hypothesis is proven*.

3.1. The future directions and current limits of the research

The representatives of the observed companies were not surveyed in a qualitative, interviewed way in the examination of the online appearance. It was due to timing problems and sizing borders. But it should be measured that how the company leaders and marketing colleagues see the possibilities of applying the online marketing tools. During our observations, after actualising the created database, we could narrow the respondents' circle by the size of the company (micro-, small, medium- and large ones) and regions. With this we could get a locally whole picture about the milk- and meat processing companies. Regarding the size category, positive and negative examples should be

selected (it can be done from the results of our research), so we could analyse the attitude and methods towards online marketing from both viewpoints.

During the research I did not examine the performers/traders of food marketing separately. My short-term aim is to estimate the possibility of involving them into my researches as well. But in this work the main objection was to map the preferences of producing/processing side.

One of the major limitations was the fact that I measured the companies in the milk- and meat processing sector subjectively, since I judged them on my own (although I created the observation sheet based on the points of popular online experts). Later it will be worth examining the official websites of these companies from the user point of view. We have several research methods for it, for example with an online focusing group based research we would be able to ask the users' opinion.

Moreover we could make a netnographic research – which is a rather new way in Hungary – where we could measure and judge the online appearance with the personal opinions, comments and judgements of users (e.g.: forum entries, posts and valuations on the social media sites). Apart from the previous researches we could apply a so-called eye-camera examination, which we could make the online appearance measurable with.

We would involve the users for these researches, who are expected to measure the selected online platforms with a given criteria. But we need a serious technical background for it, therefore we can carry it out in the future. The online activity of the local agricultural marketing performers (e.g.: Product Councils, Chambers) was not part of current research. I am aware of the fact that the communal agricultural marketing segment is also essential within the local food industry. But due to sizing limitations we could not make this examination currently. My long-term aim is to make the online observation for this segment as well, after I identified the communal agrarian sphere members.

In Q11 and Q2 surveys the online food shopping and information gathering could be misleading in several cases. As far as I know, the word 'food' is not defined exactly in other researches either. In current questionnaire survey, I meant online food ordering under food shopping as well. But this fact can manipulate the results of course. In future researches we need to create categories within the online food shopping (e.g.: canned food-, fresh and processed food-, preserved food ordering). Moreover it would be worth

doing examinations on the basis of food categories in the case of online shopping as well (e.g.: dairy products, meat products, fruits and vegetables).

The element number of the QU2 survey is relatively low, 305 persons altogether (however I provided representativeness with a gender and marital status based loading). The results are unequivocally guiding, so the created factors and clusters should be identified with the help of the current and improved complex model of the dissertation together with a representative pattern (approx. 500-1000 samples). With the relevant results, proper strategies could be defined for satisfying the demands of the digital food-consumers, whose number is spreading rapidly in Hungary.

Last but not least I must emphasise that the actuality of the information and data can be lapsed quickly, due to the research topic. So the possible actualisation of the secondary and primary examinations will be quite important.

4. NEW STATEMENTS OF THE THESIS

In this section I would like to summarise the new and recent results of my thesis.

Sci1: With the secondary research we mapped the role of the online marketing in the consumer and company levelled communication, based on local and international literature. Moreover we analysed the process of the online consumer behaviour in details.

Sci2: I adapted the Technology Acceptance Model (TAM-model), so a national representative questionnaire survey was made on 1000 samples. With a factor- and cluster analysis, we could divide the local population into well differentiated groups according to their attitude towards internet using.

Sci3: I made an overall professional examination of the online behaviour of local milk-and meat processing companies, based on NÉBIH database.

Sci4: I adapted the Information Search Model (ISM) and the Online Consumer Style Inventory (O-CSI) as a complex model. With the results of the representative, online, 305 sampled questionnaire survey I made a factor- and cluster analysis, then I created differentiated segments among national "expert internet users", based on their offline/online shopping and information gathering activities.

In *Figure 6* the overall structure of QU1 and QU2 surveys can be seen together with their factor-and cluster analysis, where I demonstrated a network of the created factors and clusters.

The insertion of the new and recent academic results into the complex research model is presented in *Figure 7*.

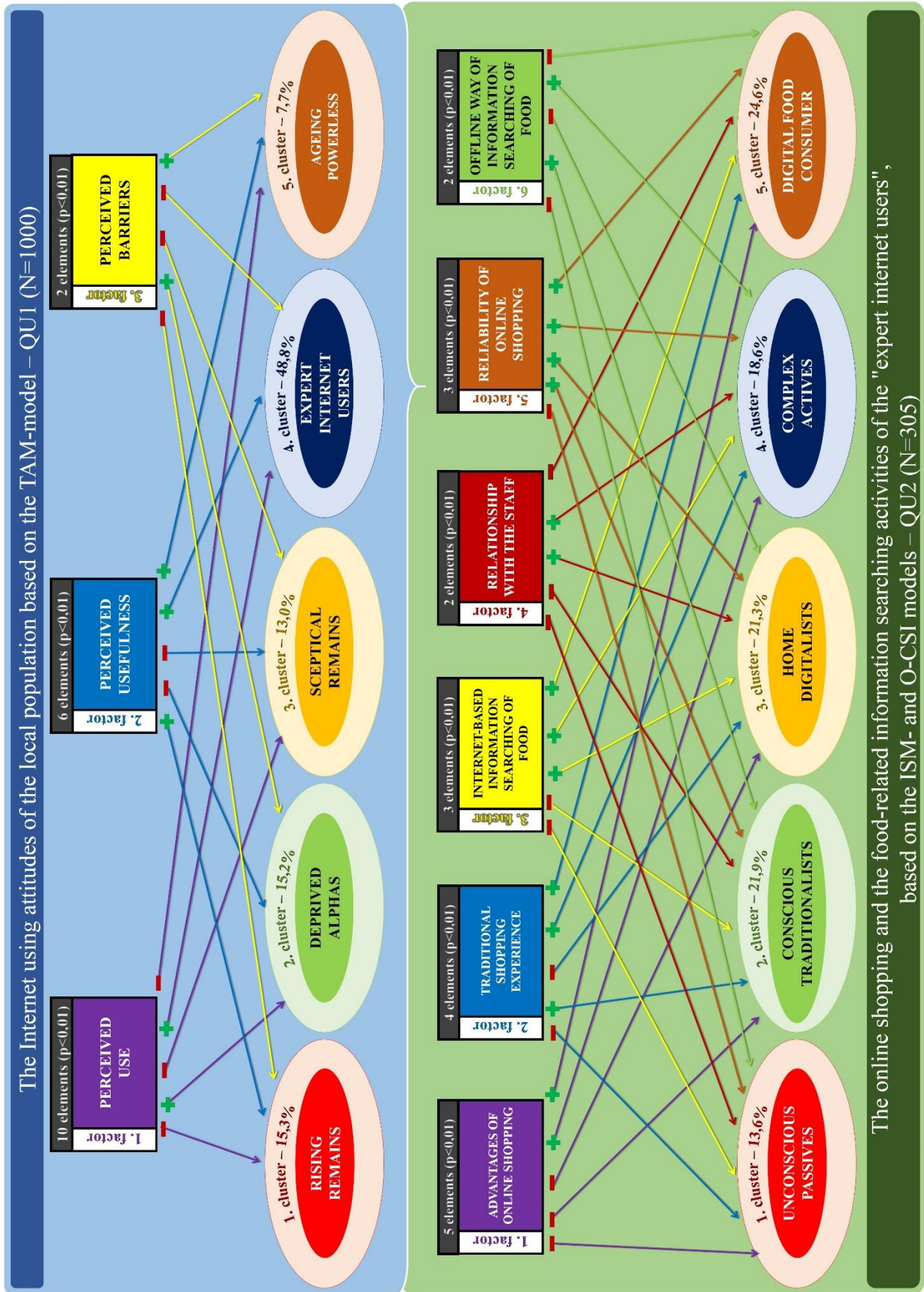


Figure 6: The summarising of the factor- and cluster analysis of QU1 and QU2 surveys

Source: Own editing, 2016

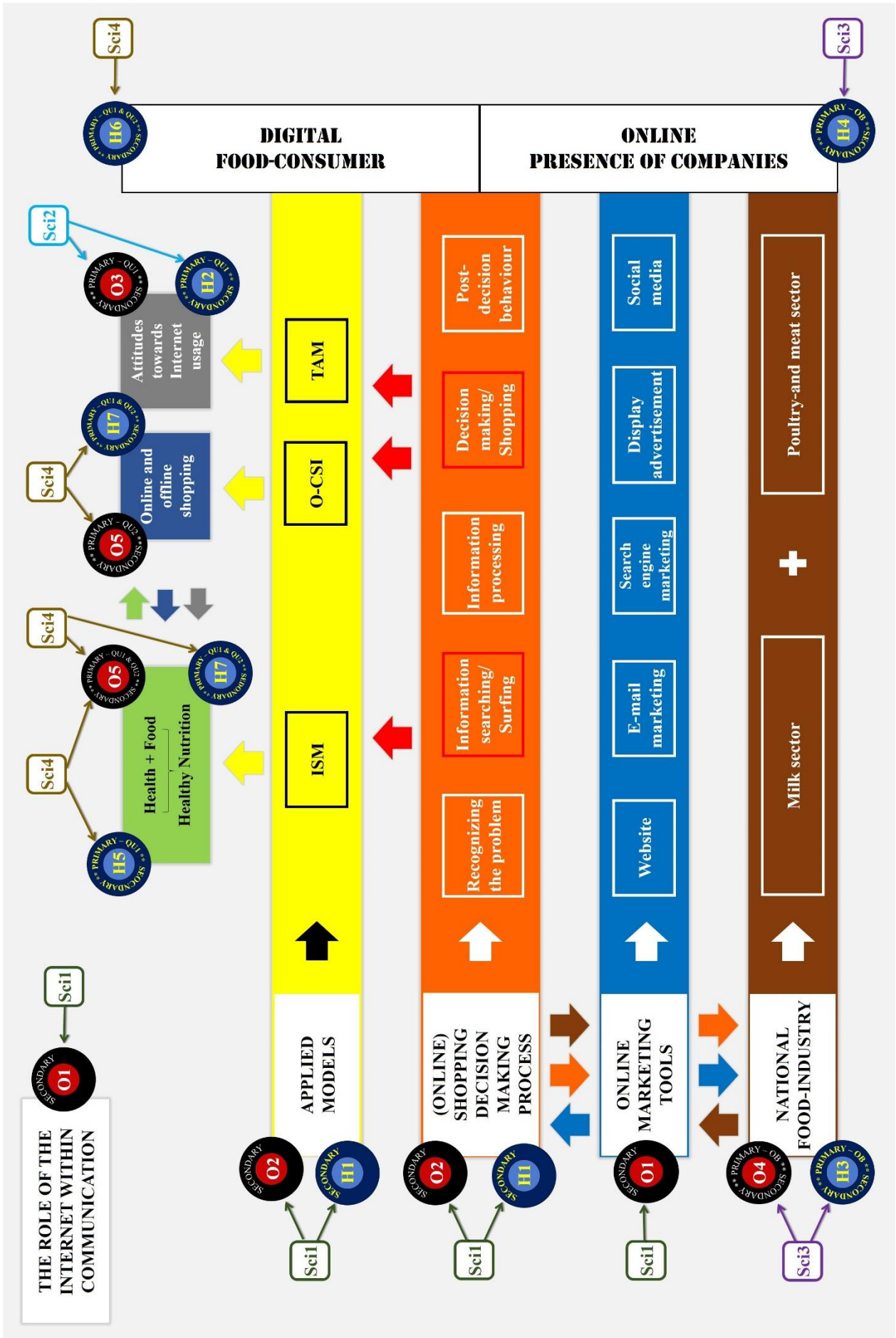


Figure 7: Placing the new and recent results into the complex research model

Source: Own editing, 2016

5. PRACTICAL APPLICABILITY OF THE RESULTS

In this section I list the most important recommendations from a practical viewpoint of the results.

Recommendation Nr. 1 (based on H3): With the help of different trainings and presentations the performers of the examined spheres should be familiarised with the possibilities given by online marketing (website improvement, social media site appearance, advertising possibilities, etc.). These events could be organised by communal initiation and with the coordination of the Chambers and Product Councils. We could ask professional companies for holding the presentations, that can relevantly inform the stakeholders.

Recommendation Nr. 2 (based on H4): During the observation we met some initiations whose application can make consumer involvement much easier. For the companies the first step would be to build a database that can be promoted with giveaways and special sale offers. With this widening database and effective advertising tools, well-aimed offers can be provided for the consumers. In the case of social media sites, comment- and sharing-based actions can generate a more consuming attitude. With meat- and dairy products a selfie with the product, or creating peculiar recipes and sharing the finished meal can generate more activeness. In the observed food types, handling children as a separate target group is essential. Creating different sub-pages and other special applications can be a good strategy towards them.

Recommendation Nr. 3 (based on H6): Nowadays, in the field of food industry it is inevitable for the companies to have an own website and/or social media site account. The related Product Councils usually aim to collect the major information about the tendencies, manufacturers and processors of their sector. But the uncoordinated, out-of-date sites are typical today as well. For improving, there should be coordination within the particular segments, and with the help of professionals, optimisation is needed for the sites and online platforms according to current trends. These websites could serve as a kind of collecting database where the sphere members (manufacturers, processors, traders) can

have their own sub-pages, with overall rights of use (e.g.: advertising platform as well). So a kind of departmental portal can be created, that serves those as well who cannot afford (for financial or infrastructural reasons) to develop and maintain an own site. With this collective one they would be able to communicate themselves towards other manufacturers, processors or traders together with the consumers as well.



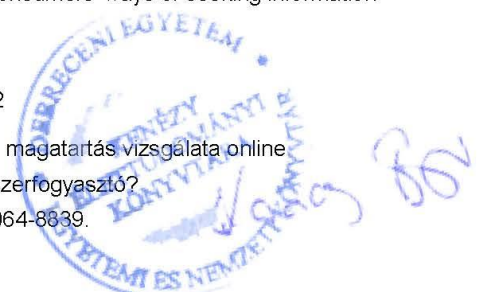
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Subject: PhD Publikációs Lista

Candidate: András Fehér
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Doctoral School: Károly Ihrig Doctoral School of Management and Business
MTMT ID: 10037504

List of publications related to the dissertation

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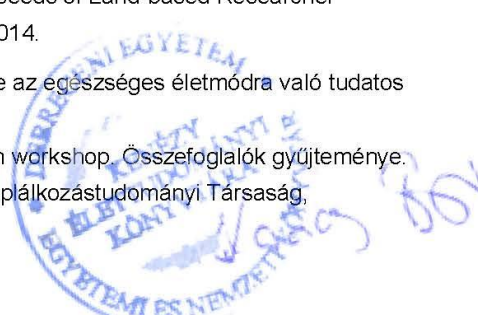




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The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of Web of Science, Scopus and Journal Citation Report (Impact Factor) databases.

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