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E-banking and Customer Satisfaction with Banking Services

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Abstract
The set-off of the financial crisis in 2007, as well as the natural dynamics of the banking sector, have determined a fierce competition within the banking industry.
The Romanian banking system developed rapidly in terms of profitability and rhythm of credit growth up to 2007, and therefore credit institutions did not make efforts to investigate and support customer satisfaction through concerted actions, since the economic growth period created and maintained the phenomenon commonly referred to as "the client searches for the bank". Starting with 2008, however, the prospects have changed significantly due to the drastic reduction of the consumption of banking products, especially loan products. Credit institutions were therefore forced to rethink their promotion strategies and pay more attention to all elements that impact customer satisfaction including digitalization of the banking products without additional costs.
Under these circumstances, banks are preoccupied, more than ever, with customer satisfaction.
The particular nature of the banking activity limits the possibilities for banks to differentiate their offer of products and services (Ilie et al., 2017). Bearing in mind that in the end all organizations strive to obtain customer loyalty, banks' concern with customer satisfaction appears as a natural and legitimate preoccupation.
Although the concept of satisfaction was introduced several decades ago by Cardozo (1965), a consensus regarding its definition has not yet been reached. Some authors view satisfaction as a process (Hunt, 1977, Tse and Wilton, 1988), while others regard it as an outcome (Howard and Sheth, 1969). Although a generally accepted definition has not yet been developed, numerous models including determinants or antecedents of customer satisfaction are available in the dedicated literature. As in the case of the definition of customer satisfaction, consensus has not been reached regarding the determinants or antecedents of customer satisfaction either.
The focus of this paper is to grasp the importance of e-banking within the general satisfaction of customers with regard to banking services.
Following an ample literature review, we selected five categories of customer satisfaction determinants with bank services: convenience, environment, quality, tariffs, and e-banking, each comprising several sub-criteria. We then employed a descriptive quantitative research, in Constanta County (South-East Romania), during November and December 2016. The research tool was a questionnaire comprising three main sections: a general socio-demographic section, a section dedicated to the assessment of the general customer satisfaction level with bank services, and a third section focused on assessing the five categories of customer satisfaction determinants in terms of bank services. Five-point semantic differentials (from 1 –very unsatisfied to 5 – very satisfied) were used in order to assess the general satisfaction level with banking services as well the satisfaction level with each of the 16 criteria.

Keywords
Customer satisfaction, banking services, service quality, customer loyalty.

Introduction

The Romanian banking system has undergone two distinct stages over the past 17 years in terms of how credit institutions have levelled on customer satisfaction and infrastructure modernization in order to offer e-banking and mobile banking services as an integral of the banking products offer. Until 2007, the range of the banking services offered to customers was part of the traditional lending and saving products and the most important aspect in relations with the clients was the product. Starting with 2008, with the manifestation of the effects of the international financial crisis, the banking system entered another stage - the refining of the banking products and services offered in order to maintain customer satisfaction and to achieve their retention in the conditions of a drastic reduction of the consumption of such products and services.

The performance indicators of the Romanian banking system from 2007 to 2009 show unequivocally the moment when the concern for the improvement of the offer and the interest for the elements that affect the satisfaction of the clients changed the operational and marketing strategies in the Romanian banking market, as can be seen in the table below:

Table 1 Selected performance indicators of the Romanian banking system

Indicator	2007	2008	2009
Growth ratio of non-governmental loan- in real terms	50.5%	25.8%	-3.6%
Overdue receivables/total assets	0.17	0.29	1.01
Overdue receivables / total equity	1.6	3.19	11.78
Profitability – ROA	1.01	1.56	0.25
Profitability – ROE	9.43	17.04	2.89

Source: Authors' compilation using data from the National Bank of Romania Reports – years 2007, 2008, and 2009

The research developed in this article aims at identifying the influence of five categories of customer satisfaction determinants with banking services in the South East Romania region. The article is organized as follows: a brief review of the literature on customer satisfaction in general and customer satisfaction with banking services, research methodology (data, the structure of the sample, data analysis), and conclusions.

1.1. Customer satisfaction with banking services – literature review

Introduced several decades ago by Cardozo (1965), the researchers and practitioners have not yet reached a consensus regarding its definition. Some authors view satisfaction as a process (Hunt, 1977, Tse & Wilton, 1988), while others regard it as an outcome (Howard & Sheth, 1969). As the complexity of the economic activity augmented, the study on satisfaction grew rapidly in the 1970's, as more than 500 studies were carried out regarding customer satisfaction (Hunt, 1982, cited by Clinton & Wellington, 2013).

In these studies were crystallized several categories of theories that have attempted to explain how it works and what influences the customer satisfaction. Reviewing the theories of satisfaction from literature, Clinton and Wellington (2013) concluded that the most documented and confirmed by different research studies are: assimilation theory, contrast theory, assimilation-contrast theory, and negativity theory. Isac and Rusu (2014), citing Peyton et al. (2003) and based on a synthesis by Vavra (1997) considered five categories of such theories, adding to those previously mentioned the theory of hypothesis testing.

The best-known theory and widely accepted by specialists is the expectancy disconfirmation paradigm developed by Oliver (1980), Churchill and Surprenant (1982) or Tse and Wilton (1988), which establishes that consumer satisfaction can be viewed as the difference between expected and perceived product performance, expectations as predictions of future performance.

Another aspect that the specialised literature highlighted was the need to support this multitude of theories with empirical evidence. Johnson and Fornell (1991, p.23) emphasized "it is important that future research adopts an empirical approach that recognizes both the nature of the satisfaction construct and the measurement problems associated with satisfaction research [...] As a latent construct, satisfaction can be measured proximally (though not equated) with observable indicators".

As customer satisfaction issues gained ground in the scientific studies, researchers have looked for the most appropriate investigative methods and created various systems of indicators in search of the most appropriate combination for the product/service considered. Several authors such as Isac and Rusu (2014) or Spreng and Page (2003) have synthesized the most commonly used methods to investigate consumer satisfaction. These include difference score, direct effects model, better than / worse than, standard percept disparity, additive differential model, etc. They are all used and each has its own advantages and disadvantages, but the choice must be made taking into account the particularities of the product/service on the one hand and the category of consumers targeted, on the other hand.

If we refer to the satisfaction of the banking services consumers, the specialized literature shows that, on the one hand, the generally developed consumer satisfaction theories have been applied in various studies at different levels (of a single bank, of a region or of a national economy). On the other hand, it was necessary to customize the methods used and the selection of the determinants in accordance with the specificity of the services and the banking industry. Belas and Gabcova (2016) synthetized the visions expressed by different authors. Some viewed a certain characteristic as being essential in determining the level of customer satisfaction while others, on the contrary, stated that highlighting only one determinant can be irrelevant, and that the relations between customer satisfaction and its determinants tend to be nonlinear, to influence each other or to be found only in some segments.

The analysis of customer satisfaction in the banking industry of Romania has been the subject of several studies but the investigation was mostly limited to either one bank (not necessarily to its entire national network) or to a city/ region. Bente (2013) conducted a study regarding consumer satisfaction with Volksbank Oradea using a SERVQUAL method and identified the safety as the most important determinant. Bena (2010) investigated through a survey the level of customers' satisfaction with a specific Romanian bank from Bucharest, while Micuda and Cruceru (2010) used SERVQUAL method to investigate customer satisfaction with banking services in the city of Pitesti. Radomir et al. (2011) developed a more extensive research regarding banking services customer satisfaction considering a single bank, Ro Bank, with a targeted geographical location in Cluj-Napoca. The authors investigated three dimensions in relation with customer satisfaction: human resources, convenience and efficiency, and tangible aspects, and found that all of them are in a positive relationship with customer satisfaction. In order to deepen the research, the study employed the technique of "more than/less than", often encountered in the international literature.

The scarcity of the research conducted to determine the level of customer satisfaction and its determinants in the Romanian banking industry is the argument that supported our research and the importance of our findings.

2. Research methodology

2.1. The data

Following a close review of the literature on customer satisfaction in general and specifically on customer satisfaction with banking services, as well as the related concepts of service quality and customer loyalty, we decided upon five main categories of determinants that impact customer satisfaction with banking services: convenience, environment, quality, tariffs, and e-banking, and in the case of four categories of determinants there were identified subcategories (Table 2).

Table 2 Customer satisfaction with services - determinants

Determinant	*Convenience*	*Quality*	*Environment*	*Tariffs*	*E-banking*
Subcategories	1. bank location 2. distance to the bank 3. availability of parking spaces 4. ATM availability	1. trust 2. prompt reaction of personnel 3. safety of operations 4. solicitude	1. furniture 2. equipment 3. cleanness 4. personnel physical appearance 5. bank atmosphere		1. availability of e-banking services 2. e-banking services performance

Source: Authors' contribution

A descriptive quantitative analysis was conducted in Constanta County, during November and December 2016. The data were collected using a questionnaire as a research tool. The questionnaires were randomly distributed, and out of 750, 667 were returned filled in. After eliminating the ones that were incomplete, the research was finally conducted on 643 questionnaires, using IBM SPSS Statistics 23.

The research instrument, a questionnaire, comprised several sections: a socio-demographic section, a section focusing on assessing the general level of satisfaction with banking services as well as the satisfaction with several service categories, and a section focused on assessing the five categories of customer satisfaction determinants in terms of bank services. The general level of satisfaction, as well as the customer satisfaction with different categories of services and the satisfaction with each of the 16 criteria listed in table 1 were assessed using a five-point semantic differential (from 1 – very unsatisfied to 5 – very satisfied).

The research presented in this paper is part of a more ample research focused on assessing customer satisfaction with banking services. The collected data made the object of a large study aimed at simulating customer satisfaction in banking services using an artificial neural network and was already published in 2017 – The hierarchical determination of customer satisfaction with banking services using an artificial neural network, by authors Ilie, Moraru, and Ghita-Mitrescu (2017). In this paper, the focus is on e-banking services and the impact e-banking services have on the general level of customer satisfaction.

2.2. The structure of the sample

The structure of the sample is presented in Figures 1-7.

Figure 1 Sample structure - Gender
Source: the authors' processing

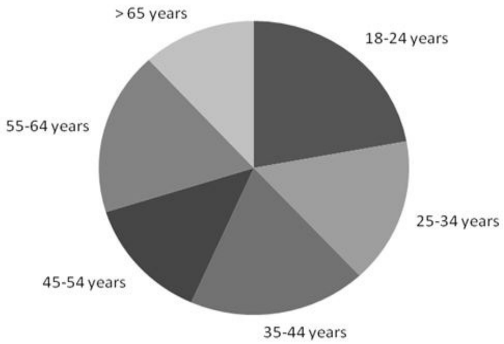

Figure 2 Sample structure – Age
Source: the authors' processing

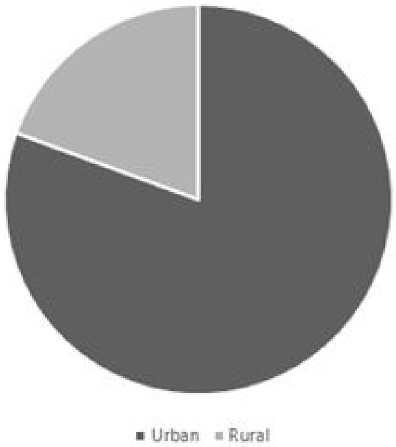

Figure 3 Sample structure -Residence
Source: the authors' processing

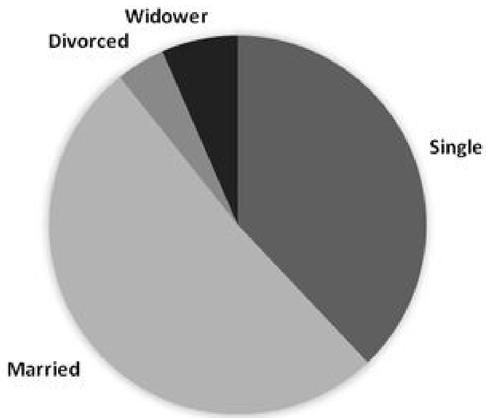

Figure 4 Sample structure - Marital status
Source: the authors' processing

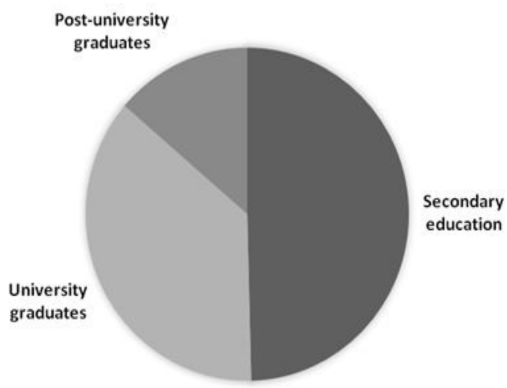

Figure 5 Sample structure – Education
Source: the authors' processing

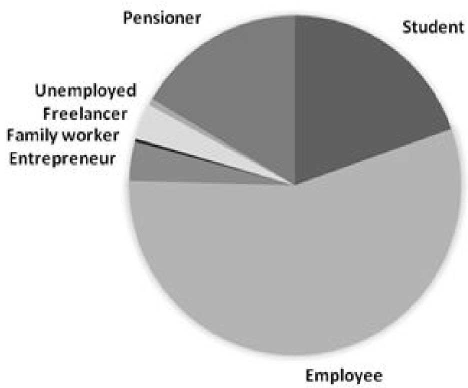

Figure 6 Sample structure - Professional status
Source: the authors' processing

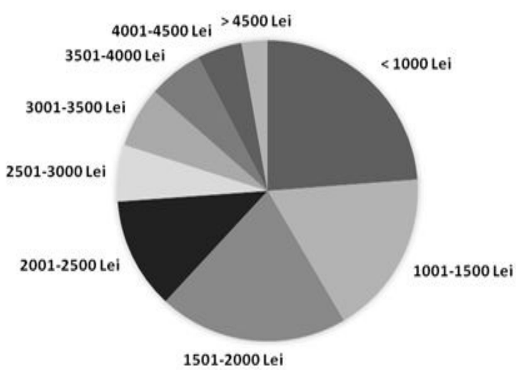

Figure 7 Sample structure - Average monthly income
Source: the authors' processing

2.3. Data analysis

The duration of the collaboration with the bank is as follows: between 5 and 10 years (39.2%), less than 5 (35.8%), between 11 and 15 years (13.2%), more than 15 years (11.8%).

Descriptive statistics regarding the general level of satisfaction and levels of satisfaction with different categories of banking services are presented in table 3.

Table 3 Descriptive statistics

	General level of satisfaction	Current account operations	Bank deposits	Credits	E-banking
Mean	4.09	4.11	3.7	3.67	4.08
Std. Deviation	.649	.690	.835	.809	.874
Minimum	1	1	1	1	1
Maximum	5	5	5	5	5
Skewness	-.874	-1.314	-1.186	-.770	-1.127
Std. Error of Skewness	.096	.096	.123	.145	.116
Kurtosis	3.083	4.413	2.366	.877	1.784
Std. Error of Kurtosis	.192	.192	.245	.288	.232

Source: authors' processing

2.4 Testing the research hypotheses

Several research hypotheses were formulated and subsequently tested.

H_1. There is a strong correlation between the satisfaction with e-banking and the general level of satisfaction.

We tested the correlation between the two variables and the results indicate that they are strongly correlated, r (641) =.357, p < .01.

H_2. The assessment of the satisfaction with e-banking services differs based on gender.

All assumptions have been met (normality of the dependent variable, homogeneity of variances), so an independent sample t test can be performed.

The test results, t (438) = -.436, p= .663, lead to the acceptance of the null hypothesis.

H_3. There are statistically significant differences in the satisfaction with e-banking services between age groups.

All assumptions have been met (normality of the dependent variable, homogeneity of variances, and independence of observations) and one-way ANOVA can be performed.

There is a statistically significant difference between groups as determined by the one-way ANOVA (F (5,434) = 3.34, p =.006).

A Tukey post hoc test revealed that the level of satisfaction with e-banking services is significantly lower for the age group over 65 years old (3,60+/-.503, p=0.28) compared to the age group 18-24 (4.24+/- .945).

H_4. The assessment of the satisfaction with e-banking services differs based on residence environment (rural/urban).

All assumptions have been met (normality of the dependent variable, homogeneity of variances), so an independent sample t test can be performed.

The test results are: t (438) = .854, p= .393; therefore, we accept the null hypothesis.

H_5. There are statistically significant differences in the satisfaction with e-banking services between professional groups.

All assumptions have been met (normality of the dependant variable, homogeneity of variances, and independence of observations) and one-way ANOVA can be performed.

There is a statistically significant difference between groups as determined by one-way ANOVA ($F(6,433) = 4.71$, $p = .000$).

H_6. There are statistically significant differences in the satisfaction with e-banking services between income groups.

All assumptions have been met (normality of the dependant variable, homogeneity of variances, and independence of observations) and one-way ANOVA can be performed.

There is a statistically significant difference between groups as determined by one-way ANOVA ($F(8,431) = 1.99$, $p = .046$).

Conclusions

The importance of the customer satisfaction in banking services is the result on the one hand, of the stronger dynamics of the industry. On the other hand, as stated by Belas and Gabcova (2016), in this business sector, characterized by an increased competition, an efficient management of selling additional products and services to existing satisfied customers represents a significant opportunity to improve the financial performance of a bank.

The research conducted revealed that overall customer satisfaction with banking services and customer satisfaction with e-banking services are strongly correlated, thus pointing out the importance of e-banking services. The research results also indicated that the assessment of the satisfaction with e-banking services does not differ based either on gender, or on residence environment (rural/urban). However, the level of satisfaction with e-banking services is significantly lower for the age group over 65 years old compared to other age groups. Our findings are in line with previously conducted studies such as Gikandi and Bloor (2010) or Mukhtar (2015). In addition, it was revealed that there are statistically significant differences in the satisfaction with e-banking services between professional groups, as well as between income groups.

Considering the importance of e-banking services in the overall assessment of satisfaction with banking services and given the impact of customer satisfaction in the increasingly competitive banking sector, the conducted research may represent a starting point for future studies regarding customer satisfaction with banking services both at national and international level. SM

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Building and Nurturing Trust Among Members in Virtual Project Teams

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Abstract
The Fourth Industrial Revolution has brought significant changes in the field of organizational design, especially in terms of how work is structured, organized, and conducted. One of the major trends widely adopted by numerous businesses worldwide is the establishment of virtual project teams, which allows members to work from remote locations regardless of their time zone, nation or culture and to collaborate using various information systems and technologies. Advantages of virtual project teams observed in terms of cost reduction, productivity growth, knowledge, skills, and flexibility are obvious and cannot be neglected. Nevertheless, challenges do often appear, and need to be addressed in order to create successful virtual organizations. The objective of this paper is to examine the role and importance of trust in virtual project teams, and to propose methods and activities that can help establish and nurture trust among employees in remote teams.

Keywords
Organizational behavior, team-based structures, virtual project teams, trust, employees, information and communication technologies.

Introduction

Modern information and communication technologies (ICT) and their continuous development have changed not only the manner in which organizations operated, but also their organizational structures, management and leadership (Luo, Van de Ven, Jing & Jiang, 2018; Snow, Fjeldstad & Langer, 2017). Many organizations, no matter in which industries they operate, have established team-based organizational structures, which provided them with necessary flexibility, decentralized decision-making, greater collaboration and knowledge transfer among employees (Miles, Snow, Fjeldstad, Miles & Lettl, 2010; Tannenbaum, Mathieu, Salas & Cohen, 2012). With the evolution of information and communication technologies, from the early 1980s until now, many organizations have established virtual teams - groups of geographically dispersed employees that are linked via different forms of technologies in order to accomplish organizational/project tasks (Townsend, DeMarie & Hendrickson, 1998). Members in virtual project teams can work from remote locations equipped with electricity, computer and Internet access. Those conditions offer employees the opportunity to organize their working time effectively in order to make a good balance between their private and professional lives (Lazarević & Lukić, 2016; Slavić, Bjekić & Berber, 2017). Responsibilities and duties of employees in virtual project teams are the same as those of traditional teams, whose members are physically at the same place; however, virtual work changes the way in which employees engage and interact with each other. Naturally, there are many concerns about achieving effective teamwork among employees that are geographically separated (Lukić, 2014). Many authors emphasized that trust was a factor of critical importance for success in virtual project teams (Brewer, 2015; Daim et al., 2012; Greenberg, Greenberg & Antonucci, 2007; Jawadi, Daassi, Kalika & Favier, 2007; Leeds, 2008; Lencioni, 2002), while executives and managers of successful companies also stated that „there is no team without trust“ (Delizonna, 2017). Recent studies have also found that building and maintaining trust in an organization would be among key organizational challenges of the future, as organizations would be judged on theirs trust and fairness (Brown et al., 2017).

The objective of this paper is to examine the role and importance of trust in virtual project teams, and to propose methods and activities that can help establish and nurture trust among employees in remote teams. The first part of the paper discusses trust as one of the challenges remote teams face, and suggests possible solutions to the proper management thereof. It also studies research results found by the Remote.co team, and affirms the importance of trust for successful virtual project team organization. The second part of the paper concludes with a statement confirming the possibility of efficiently creating a culture of trust within a virtual project team through the application and adoption of a number of methods and activities.

1. The importance of collective trust in virtual project teams

Trust has been positioned as an important research topic in management, especially in communication, leadership, negotiation, game theory, and teamwork (Mayer, Davis & Schoorman, 1995). Additionally, trust also acts as a supplement for control and coordination mechanisms (Julsrud & Bakke, 2008), and as an important ingredient of the overall organizational functioning (Ning, Yin & Mingxuan, 2007). It is proved that employees achieve greater results and have higher levels of organizational commitment when they trust each other, their managers, and leaders (Galford & Drapeau, 2003). Trust refers to honesty, fairness, and quality of relationships among employees within an organization (Holton, 2001; Hurley, 2006; Pelsmaekers, Jacobs & Rollo, 2014), with the main aim to ensure good employee relations, especially under ambiguous and uncertain conditions (Dietz, Gillespie & Chao, 2010). The literature on trust in traditional teams specified that trust led to positive work relationships, more open communication, cooperation, and a higher quality of decision-making (Krot & Lewicka, 2012). Consequently, the existence of trust is associated with high-performing teams (El-Sajjade & Wilkins, 2017; Jawadi et al., 2007; Kanawattanachai & Yoo, 2005).

Over the last two decades, virtual teams have been growing at a fast pace, and the challenges of their organization and management have increased accordingly (Ferrazzi, 2014; Petković, Orelj & Lukić, 2014; Pullan & Prokopi, 2016). One of the ingredients that is often overlooked, but very important - especially in virtual teams - is trust (Brewer, 2015; Greenberg, Greenberg & Antonucci, 2007; Leeds, 2008). The absence of traditional mechanisms of coordination and control makes it necessary for virtual team members to rely on interpersonal trust – expectations and beliefs about other members’ actions (Shin, 2004). Trust in virtual team reflects how much employees believe in each other (Jawadi et al., 2007). In situations where trust exists among team members, there is a strong belief that each member will make commitments, and act upon good intentions on behalf of the whole group (Chang, Hung & Hsieh, 2014).

In this paper secondary research was conducted by using the results of Remote.co team that, among others, collected the answers from leading remote global companies about key challenges that they virtual teams faced. Using an online tool (Worditout n.d.), the authors of the paper created a word cloud, i.e. a visual representation of words as per the importance and frequency of use by remote workforce/teams. The answers to the question “What elements are key to successful working relationships with remote teams?” were input in above-mentioned online tool. Results are given in Figure 1.

Figure 1 The most frequent words in answers regarding the key success elements in remote teams
Source: Authors (Answers of respondents available at Remote.co, n.d., pasted and formatted in: Worditout n.d.)

The analysis of the answers provided by 71 leading remote global companies regarding the elements of successful working relationships within remote teams showed that trust and communication were most commonly demanded and valued. Knowing that in a fast-paced, remote environment, cultural differences, stereotypes, pressures, and potential misinterpretations could negatively impact a team's performance, it is understandable why virtual organizations emphasize the importance of these two concepts. Furthermore, a number of studies showed that there was a relationship between communication and trust – "communication processes are the key underlying mechanisms for establishing trust" (Gibson & Manuel, 2003, p. 69). Through constant, direct, and honest communication, virtual organizations can enhance a sense of belonging, thus promoting a collaborative, supportive environment based on trust, integrity, and cohesiveness. With such organizational structure, it is more likely that a team will yield better results, as its members will be more enthusiastic and driven to achieve success.

Table 1 contains excerpts from the answers given by remote companies, which clearly depict their attitude toward trust among members in virtual project teams.

Table 1 Excerpts from the answers by remote companies, which depict their attitude toward trust

"As we work in a results-only work environment, trust of our colleagues and one another is of the utmost importance." **ICUC Social**
"When people can't physically see each other much of the time, trust becomes all the more important." **Answer Connect**
"Trust is a key element; you have to ensure that every member of the team trusts each other to do what they have agreed to." **Mavens**
"Trust. Trust. Trust. It needs to be given freely and earned daily. When it works, it is a thing of beauty." **Pagely**

Source: Adapted from Remote.co, n.d.

2. Methods and activities for building and nurturing trust in virtual project teams

Over the years, it has become evident that it was more difficult and time-consuming to develop trust in virtual teams in comparison with traditional teams (Brewer, 2015; Lee, 2014). However, similarly to how it is done in a traditional, face-to-face team, it is possible to build trust in a remote team, with a number of carefully planned methods and activities that are based on different trust dimensions – ability, integrity, and benevolence (Clark, Clark & Crossley, 2010). These methods and activities are linked to and highly dependent on the organizational structure, values, and vision, as well as personal characteristics of each team member. Some of the standard, yet fundamental methods and activities include adopting a special approach to the recruitment and selection process, hiring an effective team leader, establishing behavioral controls, implementing performance evaluation and rewarding systems, raising awareness of swift trust, maintaining positive organizational culture and climate, as well as regular and reliable communication (virtual team meetings, occasional face-to-face meetings), and organizing team-building activities (Figure 2).

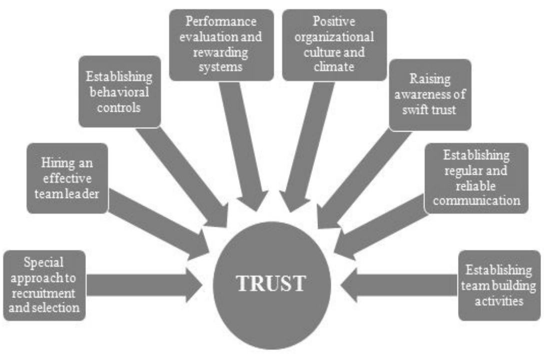

Figure 2 Proposed methods and activities for building and nurturing trust among employees in virtual project teams
Source: Authors

2.1. Special approach to the recruitment and selection process

When recruiting employees for virtual team, a hiring manager should consider more than a person's ability and willingness to work remotely (Lukić, 2014). Hiring managers need to assess the abilities of a person to perform any necessary, job-related tasks, but they also need to ensure they hire people who demonstrate strong moral principles, and who are willing to take part and contribute to team success as much as possible. Bradley and Vozikis (2004) summarized traits which virtual team members should have to enhance trust:

- Ability to work with the technology used by the team;
- High degree of functional area competency;
- High integrity;
- High propensity to trust;
- Excellent communication skills;
- Openness to innovation and ideas suggested by others;
- Cultural and social sensitivity.

2.2. Hiring an effective team leader

The team leader selection process is very important because leaders are the ones to promote communication within the group, provide constant feedback, establish group norms, stimulate creative thinking, problem solving, and knowledge sharing (Apenko, 2014). All of the mentioned activities lead to trust among team members, but also between team members and their leader. Furthermore, it is important to emphasize that shared leadership in virtual project teams could be very useful for increasing a sense of belonging and organizational commitment of team members (Brake, 2016). When each team member applies knowledge, skills, and abilities to lead a part of a project, for which they are qualified enough, they feel empowered and become more committed. Bradley and Vozikis (2004) suggested several things which leaders should consider when it comes to establishing and fostering trust in virtual project teams:

- Leaders should establish official communication guidelines;
- Leaders should precisely outline a team mission, with explicit objectives and clearly defined roles and responsibilities;
- Leader should consider social aspects of team development;
- Leader should consider cultural differences of team members.

A leader's contribution and actions are paramount because they serve as the basis for creating a pleasant working environment, and even preventing conflicts.

2.3. Establishing behavioral controls

A set of predefined rules used to guide desired behaviors of team members could be very useful for building trust among employees in virtual project teams because it is how team members become more aware of what they can expect from their colleagues (Dennis, Robert, Curtis, Kowalczyk & Hasty, 2012). In addition to the formalization of organizational norms and procedures, behavioral controls can be established through the roles of team members. Each team member has at least one role within a team, which clearly defines the responsibilities of that member. By removing potential misunderstandings regarding the role of team members, organizations are providing a precise guidance on how team members should interact with each other (Clark, Clark & Crossley, 2010), so that each team member knows what they should do, and what to expect from others. Furthermore, it is very important to manage daily activities of team members regarding status reports, project timelines, documentation, deadlines, etc. (Abudi, 2012).

2.4. Performance evaluation and rewarding systems

Each team member should be familiar with performance evaluation methods and expectations in their organization, because knowing that their results are monitored and evaluated, team members are more likely to work in the planned manner (Dennis et al., 2012). Reward systems should allow risk-taking without punishment if performance is worse than planned (Clark, Clark & Crossley, 2010). Constant feedback, discussions reflected through positive and productive criticism, recognition, and praise are a particular way to establish trust as each person can feel less isolated, and more like part of a real team. Virtual team managers need to incorporate proper ways of assessing their remote workforce, and avoid focusing on the negative exclusively, as it might affect employee performance and harm communication. Therefore, performance reviews should be balanced, naturally, if appropriate.

2.5. Positive organizational culture and climate

Team members in virtual project teams usually have different cultural backgrounds. Therefore, their attitudes, values, norms, and behaviors might differ (Staples & Zhao, 2006), which may be a source of potential misunderstandings. Team leaders and managers should establish a new, unique organizational culture and climate that everyone in the company should accept and respect. Yet, it is more about working in a collaborative environment, where participants are gathered to deliver results, and achieve goals, united around the values they all share, than it is about forcing anyone into respecting principles and beliefs they otherwise would not. Organizational culture and climate should be promoted directly on a company's website, integrated into daily work, and explained to applicants during the interview process in order to avoid any future incompatibilities and issues. A positive team climate will certainly reduce the intensity and negative effects of conflicts, as it is built on firm attitudes and mutual understanding that everyone benefits from.

2.6. Raising awareness of swift trust among remote workers

Twenty-two years ago, Meyerson and co-authors developed the concept of swift trust, a form of trust occurring in temporary team organizations (Meyerson, Weick & Kramer, 1996). According to this paradigm, trust is assumed rather than developed, and based on shared tasks and actions, not on similarities or/and differences of individuals forming a team (Jarvenpaa & Leidner, 1999). In a temporarily-built remote team, it is important to raise awareness of trust based on common objectives, roles, responsibilities, and recognized expertise, as there is not much time or need to gradually build trust. Each virtual team member should acknowledge the fact that all of the members are in the same situation regarding the success or failure of their results, and that they do not have many options, but to trust each other from the very beginning of a project (Ferrazzi, 2014).

2.7. Establishing regular and predictable communication among team members

Research has showed that the level of trust was higher in virtual teams, where members exchanged information and communicated regularly, than in teams, whose members did not communicate often (Mize, 2016). In order to build and nurture trust, team members should all be informed of any news regarding other members, such as their current/future projects, absence, sickness leave, vacation dates, etc. They need to be able to develop friendly relationships with their colleagues, which is why their company should provide them with opportunities to meet and enjoy conversations about topics other than business. Nonetheless, for all work-related questions, doubts, projects, activities, requirements, and specifications, it is impossible to predict success unless everything is precisely explained and shared across teams. Communication can be enhanced through: virtual team meetings and occasional face-to-face meetings. Weekly staff meetings, in which virtual employees meet each other through modern ICT is a way of maintaining constant communication. This helps improve confidence of team members, but also discuss major points on the agenda in a faster and more direct way than it would have been done through written communication. Even though not all of the remote workers will participate equally, they should be encouraged to ask and state their opinion whenever possible. Managers of virtual teams often organize face-to-face meetings for all team members (Brewer, 2015). They may ask that all employees come to the office a few times per year in order to build stronger relationships with their remote colleagues. Additionally, in the initiation phase of a new project, team members often prefer having face-to-face meetings, where they can interact and connect more easily (Dube & Pare, 2004), which is also very beneficial for the company itself, as its team can find solutions and explore ideas they might not consider if planning remotely.

2.8. Establishing team-building activities

In terms of team-building, face-to-face meetings can strengthen team relationships, as such encounters help them learn more about each other, and do things they could not do together virtually (play sports, eat, go out). These activities help build a stronger remote community, as they encourage conversation and collaboration. Finally, in-person gatherings help understand the importance of team spirit, as every team member gets the opportunity to understand the role and contribution of every individual on a team on a deeper level.

Conclusion

Given the fact that hiring remotely might cause a number of issues in terms of security, confidentiality, and social differences, it is of vital importance to clearly define the structure and policies an organization wants to foster among its team in order to create a culture of trust. As the practice of virtual teamwork increases, numerous team management challenges start to appear. One of such challenges is establishing and nurturing trust among members of virtual project teams that have never met or worked with each other before, especially if the chances of working together in the future are less probable. Therefore, organizations should carefully conceptualize their approaches to remote business, based on their values, available resources, and project requirements. Depending on whether teams are working on short-term or long-term projects, trust can be achieved in different ways, while less attention is given to the projects of shorter duration, where trust is more assumed, than built through successful relationship building activities that require more time and dedication.

The aim of this paper was to stress the importance of trust, and describe some of the most common methods and activities used to build and nurture trust in virtual project teams. The analysis of the Remote.co research results showed that trust and communication were indispensable for success in virtual project teams. Yet, in a remote team, it is not always easy to establish trust as its members are not communicating directly, but via online tools, which makes it more daunting – but not impossible. Some of the suggestions proposed in this paper include adopting a special approach to the recruitment and selection process, hiring an effective team leader, establishing behavioral controls, implementing performance evaluation and rewarding systems, raising awareness of swift trust, maintaining positive organizational culture and climate, as well as regular and reliable communication (virtual team meetings, occasional face-to-face meetings), and organizing team-building activities.

Even though working in virtual project teams can enchain significant issues and failures if organized wrongly, it is important to realize how many advantages the widespread of virtual work has to offer, especially in terms of cost reduction, innovation, and business expansion. Therefore, with efficient organization and management, any business with adequate resources can embrace new trends and benefit from such practices. SM

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Differences in attitudes toward internet usage – empirical study from Serbia

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Abstract
The most influential trend, which has emerged as a result of the development of information and communication technologies, is business over the internet. Users of internet, and especially mobile internet, are mostly young people from 20+ to 30+ years of age. Marketing experts and researchers call these new users: “Generation Y”, “Millennials”, or “Net generation”. This study analyzes consumer’s attitude towards four constructs: perception of mobile internet ubiquity (time and spatial flexibility); use of internet - instant gratification; use of internet - product variety; and use of internet - riskiness. Research hypotheses were tested by analyzing data collected from a sample of 521 respondents from Serbia. Statistically significant differences according to age, gender, and education level of respondents were found. Considering the nature of the internet that allows reaching customers all over the world a better understanding of the attitudes of young internet users from Serbia.

Keywords
Internet shopping, Generation Y, attitudes toward the internet, mobile internet ubiquity.

Introduction

In the knowledge economy, the contours of knowledge organization are expanding and encompassing both buyers and suppliers. As part of the research of knowledge economy and knowledge organization, great interest exists in the changes that relate to buyers and users of products and services offered by knowledge organizations. In order to survive in the global economy, organizations must improve their products and services using their intellectual capital through a dynamic network of knowledge exchange both inside and outside of their borders. Improving information and communication channels between the organization and its environment enables discovery of new entrepreneurial opportunities (Shane & Venkataraman, 2000), so developing relationships with customers and suppliers is of great importance (Ardichvili, Cardozo & Ray, 2003; Koryak et al., 2015).

Knowledge management in the organization goes through a period of transformation in a direction that is oriented towards the customer (Taghizadeh, Rahman & Hossain, 2018), under a recognizable name Customer Knowledge Management.

In addition to treating customers as a significant source of knowledge (Gibbert, Leibold & Probst, 2002), it becomes important to understand their relationship to new trends in order to better satisfy their needs. Thus, the buyer becomes an active creator and an equal partner in the process of adding value to the products and services of the organization. One of the most influential trends, which has emerged as a result of the development of information and communication technologies, is doing business over the internet. There is a lot of research that deals with the factors of the influence of the internet and digital strategies on business operations.

Users of internet and mobile internet are mostly young people. Marketing experts and researchers call these new users Generation Y, Millennials, Net generation, etc. Members of Generation Y, young people in their 20's and 30's, are the first generation that hasn't experienced the world without internet, they are internet surfing masters, online connectivity champions, the first generation in history whose members measure the number of acquaintances in hundreds and thousands.

This paper examines the views of buyers in Serbia that belong to the Generation Y in the context of the use of internet and mobile internet. User opinions were analyzed in relation to the four constructs: Ubiquity of the mobile internet - spatial and temporal flexibility; Use of the internet – instant gratification; Use of the internet - variety of products; Use of the internet – riskiness.

The main objective of this research was to measure attitudes, primarily of young internet users, towards the use of internet and mobile internet, and to examine whether there were statistically significant differences in attitudes in terms of gender, age and level of education. In line with the research objectives, hypotheses have been defined:

Hypothesis 1: There are statistically significant differences among genders in their attitudes towards the usage of the internet.

Hypothesis 2: There are statistically significant differences among respondents of different age in their attitudes towards the usage of the internet.

Hypothesis 3: There are statistically significant differences among respondents of different education levels in their attitudes towards the usage of the internet.

Research hypotheses were tested by analyzing data collected from a sample of 521 respondents from Serbia. Statistically significant differences in attitudes of the respondents regarding the use of the internet and mobile internet in terms of age, sex and level of education, were determined.

1. Theoretical framework

In this part of the paper we define constructs in relation to which the attitudes of internet users belonging to the Generation Y are analyzed, and we give a review of the literature from which the constructs were adopted.

1.1. Ubiquity of the mobile Internet – spatial and temporal flexibility

Ubiquity of the mobile internet – spatial and temporal flexibility is a unique feature of mobile phones (Barnes & Huff, 2003), because mobile phone can be used at any time almost everywhere. Okazaki, Li & Hirose, (2009) defined the perception of ubiquity as the extent to which a person believes that the ability to access the internet with a mobile phone gives him spatial and temporal flexibility. Information technology is characterized by three constraints in the context of time and space: **connection**, which requires the presence of users at a specific time and place; **ability**, which refers to the resources of the user and his capacity to overcome the spatial separation at a particular moment; **time and spatial zones**, which restrict access to certain services at a particular point in time. Ubiquity of the mobile internet allows the user to overcome all three of these restrictions.

Questionnaire for measuring attitudes towards ubiquity of the mobile internet was developed by Okazaki, Li & Hirose (2009), whereby part of the questionnaire relating to time flexibility was adopted from the work of the authors Mathwick, Malhotra & Rigdon (2002).

Three items in this questionnaire measure the extent to which a person believes that the ability to access the internet using a mobile phone gives him spatial flexibility (Okazaki et al., 2009):

- I1 - Using the mobile internet I can get information wherever I am;
- I2 - The use of mobile internet gives me the opportunity to overcome spatial constraints;
- I3 - Browsing websites via the mobile internet is possible in every location, wherever I am.

Two items in this questionnaire measure the extent to which a person believes that the ability to access the internet with a mobile phone gives him time flexibility (Mathwick et al., 2002):

- I4 –Use of the mobile internet is an effective way of using my time;
- I5 –Browsing websites via the mobile internet fits my schedule.

1.2. Internet usage – Instant Gratification

The results of previous researches show that experience of pleasure or hedonistic motives also affect buying, and shopping behavior (Arnold & Reynolds, 2003; Bellenger & Pradeep, 1980; Ridgway, Dawson, & Bloch, 1990). Hedonistic motives relate to positive feelings, a sense of pleasure and excitement, which the customer feels as he shops or buys. Positive feelings that a consumer has during shopping motivate him to buy more. Instant positive feeling relates primarily to the process of shopping and buying, rather than to the specific delivery or use of the product (Kukar-Kinney, Ridgway, & Monroe, 2009). The experience of online shopping can trigger these positive feelings faster than shopping in the physical stores, and in this way it can quickly improve the negative mood of the consumer.

The questionnaire for measuring the extent to which the consumer, because of the instant positive feelings he has experienced, rather buys over the internet than in retail facilities, was developed by Kukar-Kinney et al.(2009). The authors developed this and other scales in an effort to better understand compulsive buying and shopping on the internet. Starting with 22 items, the survey was conducted on a sample of 314 buyers at online women's clothing stores. After the reduction of the items, the remaining 16 items formed four factors, one of which was related to instant gratification, and consisted of the following four items:

- I6 - I can more quickly satisfy my need to shop and buy;
- I7 - I can instantly get pleasure from buying;
- I8 - Shopping via the internet can get me out of bad mood faster;
- I9 - Shopping over the internet is more exciting.

1.3. Internet usage – product variety

Among the motives for online shopping, a significant positive correlation has been established between the "variety of information and products" and shopping. Many authors examined behavior of obsessive buyers. Obsessive buyers want to experience positive, stimulating feelings while shopping (Faber & O'Guinn, 1992).When unhappy, obsessive buyers can improve their mood quickly by shopping over the internet, given the diversity of information and products (Ridgway, Kukar-Kinney & Monroe, 2008). Greater variety gives consumers a greater chance to experience positive feelings as it offers more exciting shopping (McAlister & Pessemier, 1982). The internet allows consumers to view and buy products at many different stores with many different brands, which is not possible in traditional stores. Positive correlation in motivation for buying and shopping over the internet was determined in the paper by Kukar-Kinney et al. (2009).These results can be helpful when it comes to segmentation of customers, and the intention to understand the reasons why a consumer chooses an 'online' or 'offline' sales channel.

A questionnaire with five items for measuring the extent to which the consumer (due to the range of products available for purchase as well as information about them) prefers buying online to buying in retail stores, was developed by Kukar-Kinneyet al., (2009):

- I10 - There is greater selection of products;
- I11- There is a greater selection of places where you can buy;
- I12- It is easier to find things I like available in the right size;
- I13- I like to review many products in a short time;
- I14 - I can get a lot of information in a short time.

1.4. Internet usage – riskiness

This construct measures the degree to which a person sees his or her various internet activities as a potential threat to his or her privacy, especially when buying online. Schlosser, White & Lloyd, (2006) suggest that a distinction be made between persons that use internet for searching (searchers), and those that use internet for browsing (browsers). Introducing the distinction between searching and browsing has important implications for the link between the investment in the website and the intentions for online buying (Schlosser et al, 2006).

In their study Schlosser et al. (2006) investigated intentions towards buying by persons doing online searching. As the aim of this research was to anticipate intentions for buying at an online store, the authors focused on people searching over the internet and whose goals could be described as buying consideration. This study states that the intentions of those searching over the internet with the goal to buy are more influenced by their confidence in the company's ability than by their confidence in the benevolence and integrity of the company. The consequence of this study is the conclusion that investments in website, which affirm the ability of the company, have a greater impact on those who search over the internet than their statements concerning the benevolence and integrity of the company (privacy / security statements).

A seven item questionnaire for measuring degree to which a person views various online activities as potential threats to security and/or privacy, especially when shopping for products, was developed by Schlosser et al., (2006) as a part of another research presented in that paper:

- I15 - Shopping online is risky;
- I16 - Providing credit card information online is risky;
- I17 - Providing personal information online is risky;
- I18 - Buying things on line is risky;
- I19 - Giving my e-mail address and phone number online is risky;
- I20 - Online registration is risky;
- I21 - It is riskier to shop online than offline for a product.

2. Research methodology

2.1. Instrument

A structured questionnaire was developed in order to collect data on the views of internet users. All constructs and related items used in the questionnaire were adopted from published studies and linguistically adapted. The questionnaire was structured in the following way: in the first part of the questionnaire, general demographic data (gender, age and level of education) were required; in the second part of the questionnaire were questions regarding attitudes towards use of mobile internet and internet. The second part of the questionnaire contained 21 items that measured four constructions of attitudes (constructs) regarding the use of internet: ubiquity of mobile internet – spatial and temporal flexibility (5 items); Internet usage – instant gratification (4 items); internet usage – product variety (5 items); and internet usage – riskiness (7 items). In order to determine the attitudes of the respondents, we measured all multi-item constructs using the seven-point Likert's scale with anchors "I disagree completely" (=1) and "I agree completely" (=7). All of the items were positively formulated.

2.2. Sample

The questionnaire was distributed online and a call for participation in the research was sent through the MailChimp marketing platform to 1500 randomly selected former and current students of the Faculty of Technical Sciences at the University of Novi Sad. During the period from November 2016 until March 2017, a total of 521 valid responses to the questionnaire were collected. Out of the total number of respondents 462 (88.7%) were under the age of 26; 24 (4.6%) were older than 26 but under the age of 30; and 35 (5.7%) were above the age of 30. When it comes to gender, 198 (38%) of respondents were male, and 323 (62%) were female.

In relation to the highest level of education, the highest number of respondents completed secondary education (353 or 67.8%); 2 year college (39 or 7.5%); bachelor's degree (82 or 15.7%); master's degree or PhD (47 or 9%).

3. Research results

All the theoretical concepts used in this study were adopted from previous studies published in scientific literature, and they provide the theoretical and rational framework of this research. Due to the fact that items for the measurement of attitudes regarding the use of the internet were not taken from just one source, we first performed principal component analysis to confirm theoretical constructs. For the analysis of the justification for the application of factor analysis, the KMO (Kaiser-Mayer-Olkin) test, and the Bartlett test were used. The KMO indicator value is 0.915 which exceeds the recommended value of 0.5. Bartlett's test of sphericity achieved statistical significance (χ^2 = 9623.012; p= 0.000 < 0.05), thus fulfilling the conditions for justification of the application of factor analysis.

The Principal Components Factor Analysis was applied and the number of main components was determined using criteria based on characteristic values (Kaiser criterion) according to which only factors that have an eigenvalue greater than 1 were included in the promax oblique rotation. The results demonstrated formation of four components (factors) and they coincided with the results obtained by using the Scree plot based criterion. All items (except the item I6 in Factor 4 which had loading 0.5) had loadings greater than 0.75. That is considered to be a strong correlation, proving that each construct is strongly linked to its set of interrelated items, i.e. that the validity of the construct can be considered appropriate. The items are, as indicated in the literature, grouped into factors (components) that form the dimensions of attitudes towards the use of internet:

Factor 1 – Riskiness: the eigenvalue of the most influential factor is 8.935 and it explains 42.547% variance. Item with the highest factor loading is: I19 - Giving my e-mail address and phone number online is risky, followed by I18 - Buying things online is risky, and I20 - Online registration is risky, followed by others presented in Table 1.

The reliability of the subscales was evaluated by means of the Cronbach's alpha coefficient: 0.944, which means that instrument is reliable (Table 1).

Table 1 Principal Component Factor Analysis

	Factor 1–Riskiness		Factor 2–Product variety		Factor 3- Ubiquity		Factor 4- Instant gratification	
Factor characteristics	items	loadings	items	loadings	items	loadings	items	loadings
	I15	0.830	I10	0.926	I1	0.876	I6	0.501
	I16	0.836	I11	0.936	I2	0.914	I7	0.824
	I17	0.865	I12	0.876	I3	0.792	I8	0.922
	I18	0.902	I13	0.795	I4	0.851	I9	0.826
	I19	0.938	I14	0.837	I5	0.848		
	I20	0.906						
	I21	0.754						
Eigenvalue	8.935		6.91		6.67		4.45	
% variance	42.547%		19.179%		8.432%		5.933%	
Cronbach's α	0.944		0.928		0.909		0.871	

Source: authors' calculation in SPSS 20.0 based on survey data

Factor 2 – Product variety: the eigenvalue of the second factor is 6.91 and it explains 19.179% of the variance. Item with the highest factor loading is: I11 - There is greater selection of places where you can buy, followed by: I10 - There is greater selection of products and so forth as presented in Table 1.

The reliability of the subscales was evaluated by means of the Cronbach's alpha coefficient: 0.928, which means that instrument is reliable (Table 1).

Factor 3 - Ubiquity: the eigenvalue of the third factor is 6.67and it explains 8.432% of the variance.

Item with the highest factor loading is: I2 - Use of mobile internet gives me opportunity to overcome spatial constraints, followed by: I1 - By using mobile internet I can get information wherever I am, and so forth as presented in Table 1.

The reliability of the subscales was evaluated by means of the Cronbach's alpha coefficient: 0.909, which means that instrument, is reliable (Table 1).

Factor 4 – Instant gratification: the eigenvalue of the fourth factor is 4.45 and it explains 5.933% of the variance. Item with the highest factor loading is: I8 - Shopping via the internet can get me out of bad mood faster, followed by: I9 - Shopping over the internet is more exciting, and so forth as presented in Table 1.

The reliability of the subscales was evaluated by means of the Cronbach's alpha coefficient: 0. 871, which means that instrument is reliable (Table 1).

In order to test the hypothesis:

Hypothesis 1: There is a statistically significant difference between genders in their attitudes towards the usage of the internet,

the obtained factor scores were tested using the Levene's test for equality of variances and t-test. Statistically significant differences between genders ware determined regarding the mean values calculated for:

- Factor 3 – Ubiquity ($t= -2.785$, $df=519$, $p<0.01$), and
- Factor 1 - Riskiness ($t= -4.098$, $df=519$, $p<0.01$) (Table 2).

Table 2 t-tests of independent samples for gender comparisons; Levene's test for testing equality of variances

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
F3	3.222	.073	-2.785	519	.006	-0.412	0.148
F4	2.015	.156	-.470	519	.639	-0.064	0.135
F2	7.321	.007	.722	371.632	.471	0.113	0.156
F1	2.969	.085	-4.098	519	.000	-0.555	0.136

Source: authors' calculation in SPSS 20.0 based on survey data

In order to test the hypothesis:

***Hypothesis 2*: There is a statistically significant difference between respondents of different ages in their attitudes towards the usage of the internet, the obtained factor scores were tested using the Levene's test for equality of variances and t-test. Statistically significant difference between respondents younger than 26, and respondents older than 30 years of age was determined regarding the mean value calculated for:

- Factor 3 - Ubiquity (t= –2.078, df=498, p<0.05) (Table 3).

Table 3 t-tests of independent samples for comparison of groups of respondents under the age of 26 and over 30 years of age; Levene's test for testing equality of variances

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
F3	3.413	.065	-2.078	498	.038	-.35925719	.17290971
F4	.000	.984	.272	498	.786	.04694226	.17284080
F2	.966	.326	-1.791	498	.074	-.30969332	.17290011
F1	.671	.413	-1.383	498	.167	-.24099339	.17422887

Source: authors' calculation in SPSS 20.0 based on survey data

In order to test the hypothesis:

***Hypothesis 3*: There are statistically significant differences among respondents of different education levels in their attitudes towards the usage of the internet,

the obtained factor scores were tested using the Levene's test for equality of variances and t-test. Statistically significant differences between respondents with completed (2 year) college and respondents with completed bachelor's degree were determined regarding the mean values calculated for:

- Factor 3 - Ubiquity (t= –3.334, df=120, p<0.05),
- Factor 2 - Product variety (t= –3.367, df=120, p<0.05) (Table 4)

Table 4 t-tests of independent samples for comparison of groups of respondents with completed (2 year) college and those with completed bachelor's degree; Levene's test for testing equality of variances

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
F3	22.114	.000	-3.334	120	.001	-.58	.17
F4	.366	.546	-1.766	120	.080	-.358	.202
F2	7.503	.007	-3.367	120	.001	-.622	.1848
F1	4.713	.032	-1.625	120	.107	-.314	.193

Source: authors' calculation in SPSS 20.0 based on survey data

Statistically significant differences between respondents with completed bachelor's degree and those with master's or doctoral degrees were determined regarding the mean values calculated for:

- Factor 4 - Instant gratification(t= 2.337, df=127, p<0.05)
- Factor 2 - Product variety (t= 2.435, df=127, p<0.05) (Table 5).

Table 5 t-tests of independent samples for comparison of groups of respondents with completed bachelor's degree and those with master's or doctoral degrees; Levene's test for testing equality of variances

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
F3	16.408	.000	1.388	127	.167	.233	.167
F4	1.447	.231	2.337	127	.021	.427	.183
F2	4.112	.045	2.435	127	.016	.417	.172
F1	.082	.775	.987	127	.326	.172	.174

Source: authors' calculation in SPSS 20.0 based on survey data

A statistically significant difference between respondents who completed secondary education and those who completed (2 year) college was determined only for:

- Factor 4 - Instant gratification ($t= 2.086$, $df=522$, $p<0.05$) (Table 6).

Table 6 t-tests of independent samples for comparison of groups of respondents with completed secondary and those with (2 year) college education; Levene's test for testing equality of variances

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
F3	.133	.716	-.228	522	.820	-.021	.094
F4	.038	.845	2.086	522	.037	.194	.093
F2	.262	.609	.363	522	.716	.034	.093
F1	.092	.762	1.832	522	.067	.171	.093

Source: authors' calculation in SPSS 20.0 based on survey data

Conclusion

Within this paper we examined attitudes of customers from Serbia, primarily young internet users belonging to the Generation Y, in the context of the use of internet and mobile internet. User attitudes were analyzed in relation to four constructs: Ubiquity of mobile internet – spatial and temporal flexibility; Internet usage – instant gratification; Internet usage – product variety; Internet usage – riskiness. Statistically significant differences were identified in the attitudes of the respondents towards the use of internet and mobile internet depending on the age, gender and level of education. In future research, it would be useful to analyze the identified differences for a better understanding of this customer segment. Given the characteristics of the internet that enable access to customers around the world, better understanding of attitudes towards the use of internet and mobile internet of the young users from Serbia could be of benefit to the business public not only in Serbia, but also globally. SM

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Analyzing the Differentiation Strategies Of Big Companies Competing With Each Other

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Abstract
The purpose of the research was to evaluate the competitive strategies of the two big companies in Pakistan. To achieve this aim, the two competing companies in the ice cream sector were evaluated that include Unilever Pakistan and Engro for their brands Magnum and Omore respectively. The primary research was conducted using a questionnaire survey as the research instrument. The instrument was evaluated for its reliability and then the research was conducted with 100 consumers. The findings were relevant to the literature discussed in the research that the product is differentiated by adding value to add. Additionally, it was also found that to create value it is not limited to add value through quality, but it can also be differentiated by adding features into the product to add value. Nevertheless, the findings from the study revealed that the consumers in Pakistan prefer the differentiated product. Particularly, the consumers preferred Magnum ice cream over Cornetto and Omore because it was rich in taste and quality. Although, consumers also regarded it as expensive but they also responded to a survey that it offers value for the price. Notably, the consumers were also found preferring a low-cost product which indicates that in Pakistan the competitive strategy that is successful is differentiation and that Unilever Pakistan capitalizes with differentiation through Magnum and also serves low-cost markets and competes with OMORE brand. The recommendations were proposed for further research.

Keywords
Differentiation Strategies, Big Companies of Pakistan, Ice cream sector, Unilever Pakistan, Engro Foods, Low-Cost Leadership, Analyzing Differentiation Strategy.

Introduction

In today's competitive business environment, everything for everyone is no longer applicable to create differentiation among the customers. The customers today have become more aware, and they have a deeper knowledge of the products, and they also consider pricing factor apart from the differentiation for purchase (Davcik & Sharma, 2015). Nevertheless, being different is not enough to create differentiation rather it requires adding value to the product to ensure the differentiation. Adding value means helping clients solve problems they could not solve without the support of a particular company, or take advantage of opportunities that were previously not available to them. In this essence, the studies have been conducted to determine the need of differentiated products in particular industry for instance retail, fashion, tourism, banking and FMCG industry (Rungtrakulchai, 2018; Sharma & Sharma, 2017)

Nevertheless, the experts emphasize particularly for the commodities industry to ensure differentiation because those products that do not vary from one place to another, do not exist since each company offers them in a different way, adapted to the needs of its customers, which are all different (Hudson, Huang, Roth & Madden, 2016; Walsh, Shiu & Hassan, 2014). In this spirit, it is essential for the companies in the contemporary business environment to be very competitive (Anđelković & Radosavljević; Zdraveski, Janeska & Taleska, 2014) , just like that will be able to establish themselves in the current markets where there is a great competitive rivalry between the companies. This is how one of the main decisions that must be made by the business owners when establishing an organization or company, it is the choice of the business strategy to follow. Among the competitor strategies of Porter; two of the most utilized strategies are differentiation and low-cost leadership where most of the companies compete (D. Banker, Mashruwala & Tripathy, 2014; Gallopel-Morvan, Gabriel, Le Gall-Ely, Rieunier & Urien, 2013). Correspondingly, the current research would explore the differentiation strategies of two big companies in the commodity industry of Pakistan that compete with each other.

1.1. Problem statement

Most of the companies in the contemporary business environment compete on the basis of differentiation and low-cost leadership strategy as their competitive strategies. The recent research in the academic literature is conducted to determine the need of the differentiated products in Western market (Kilian & Hennigs, 2014; Koulayev, 2014), whereas in the context of Pakistan the study on competitive strategies is performed in the textile industry (Afridi, Saboor, Tariq & Ishaq, 2016; Loken et al., 2011). However, the other industries like commodities and FMCG have been overlooked to determine their competitive strategies (Farkas, 2016) . Since differentiation plays a vital role in the business development and marketing by offering the customers enough incentives to choose a particular company instead of the competitor's or substitute; thus, it is essential to determine the need of differentiation and how the companies compete to create differentiation. Therefore, the problem that the current research aims to analyze how the big companies in Pakistan compete and what differentiation strategy they use to compete with each other.

1.2. Research Aims and Objectives

The aim of the research is to analyze the differentiation strategies that the Pakistani companies use to compete with each other where the undertaken organizations are Unilever Pakistan and Engro Corporation. Particularly, the companies compete in the frozen dessert and ice cream sector where Unilever Pakistan has walls and Magnum and Engro Corporation competes with Omore as its ice cream and frozen dessert brand under Engro Foods. The present research would analyze how the companies compete by implementing differentiating in the frozen dessert product. Following are the research objectives that the research would address:

- to determine the impact of consumer's decision towards the differentiated product in the frozen dessert category.
- to analyze the impact of consumer's decision towards the low-priced product in the frozen dessert category.
- to evaluate the successfulness of differentiation strategies implemented by Engro and Unilever Pakistan.

2. Literature review

2.1. Concept of competitive strategies

Competitive strategy is defined by Porter and Lee (Lewis & Ling, 2015; Porter & Lee, 2015) as a strategy that involves an offensive or defensive action to create a defensible position against the five forces competitive markets, in such a way that a result is above the average of the company's competitors of the industrial sector. The strategic competitiveness involves positioning a business to maximize the value of the capabilities that distinguish it from its competitors, at the same time the goal of any generic strategy is "to create value for buyers" (Grant, 2016). The competitive strategy is aimed to search for a favorable competitive position in a sector industrial. The competitive strategy is about establishing a profitable and sustainable position against the forces that determine the competition in the industrial sector. In this context, Liu & Atuahene-Gima, (2018) and Gellweiler, (2018); Salavou, (2015) agree that the main interest of these generic strategies is aspects of the competition, such as the creation of distinctive advantages. Similarly, for Porter and Heppelmann (Gilmore, Tavakoly, Taylor & Reed, 2013; Porter & Heppelmann, 2015), the strategy chosen by the company is an activity that adds value in the product; therefore, the underlying idea is to look for a strategy that favors the maintenance of the comparative advantage for the company.

In this sense, competitive actions are defined as competing movements initiated by a company externally addressed to increase its relative competitive position. According to Armstrong, Kotler, Harker & Brennan, (2015), this strategy is not only implemented to add value to a product but also the value can be added to the features of the product including the segmentation and availability of the product in markets. The similar argument has been made by Rothaermel, (2015), who argues that the companies create differentiation apart from creating value in the product by increasing the features of the product like complimentary services that are different from the competitor's product. The argument is also consistent with Armstrong, Kotler, Harker, and Brennan (Armstrong et al., 2015; Hoek & Robertson, 2015) who argues that the objective of the competitive strategy is to understand the roads through of which companies compete with each other. The strategy would be the tool to improve the competitiveness of companies. Nevertheless, Block, Kohn, Miller, and Ullrich (Block, Kohn, Miller & Ullrich, 2015) argues that it requires the company resources to create differentiation because a competitive strategy requires company efforts and resources.

2.2. Types of competitive strategies

According to Porter and Heppelmann (Porter & Heppelmann, 2015), the companies can achieve competitive advantage in four different ways where the first is differentiation that is implemented by adding value for the customer. The second is cost-leadership, where the brand competes due to the low price and the third is focus strategy where the company serves a narrow market segment that has been overlooked by most of the companies (Hansen, Nybakk & Panwar, 2015; Hsu, Myers, Ribisl & Marteau, 2013). The focus strategy has two variants that are cost focus and differentiation focus where the company has to ensure whether it would operate in a narrow market with cost leadership or differentiation. Each of generic strategies involves a fundamental route for achieving competitive advantage by selecting a strategy to achieve its strategic objective that is achieved through competitive advantage (Beglari, 2017; Ford, Moodie & Hastings, 2012). Although choosing and implementing a generic strategy is far from simple, but the companies decide to choose a particular strategy based on the market and considering the competitor's strategy.

Nevertheless, there are also companies that perform without the competitive advantage which Porter identified as be everything to everyone recipe for strategic mediocrity and performance below average a company has no competitive advantage at all (Laari, Töyli & Ojala, 2017). The concept of generic strategy Porter is based on the premise that there several ways to achieve competitive advantage depending on the structure of the sector industrial. If all companies in an industrial sector followed the same principles of competitive strategy, there would also be no competitive advantage. In this context, authors Brenes, Montoya & Ciravegna, (2014); Cherrier & Gurrieri (2014) also agree and further argues that in such a case it requires the companies to focus on bringing differentiation to become prominent among consumers. Besides, there is VRIO framework that is focused on the principle that the companies can differentiate if they have the ability to become valuable, rare, difficult to imitate and have the ability to exploit the resources and capabilities (Stead et al., 2013; Tan & Sousa, 2015). Realizing the latter framework is difficult, but it ensures the sustainable competitive advantage for the companies.

2.3. Successfulness of differentiation strategy

Regarding the differentiation strategy, it has been argued by Manev, Manolova, Harkins & Gyoshev, (2015) that the basic factors that the company needs to contribute to creating differentiation are in the form of research and development, marketing, production and other key dimensions. The researchers also claim that to become different from the competitors, it requires creating value for the customers and also investing integrative efforts of the companies to achieve differentiation (D. Banker et al., 2014). In contrast, there are researchers who agree with the fact that the differentiation can be achieved through the additional features and complimentary services, but it does not require additional resources. Particularly, it has been found in the study conducted by researchers Gabrielsson, Seppälä & Gabrielsson, (2016); McAuley, (2014) who revealed that there are companies who have added value in the services for their core products to create differentiation. In this context, researchers Mathooko & Ogutu (2015); Sacks et al., (2015) argue that the key to differentiation is understanding the company, customers, and all the stakeholders and create value to ensure the business success.

It is clear that each company has its particularities and therefore there would not be two equal strategies since each company has different objectives, available resources, capabilities, different areas and scope (Arli, Rundle-Thiele & Lasmono, 2015; Oyewobi, Windapo & James, 2015). However, the companies that have similar strategies share similar products and have a similar story, but they also compete to develop new resources and capabilities. Similarly, companies whose strategies are markedly different will also tend to be markedly different with respect to their resources (Kim, Shin & Min, 2016); a match is not necessarily absolute among the strategies. In this context, Porter & Heppelmann (2015) argue that a company gets competitive advantages when it gets to perform activities strategically relevant, to understand the variation in costs and sources potential or existing differentiation. In other words, a company gets competitive advantages when it gets to perform these strategically important activities better or more cheaply than their competitors (Lechner & Gudmundsson, 2014). Each of the activities can be a source of competitive advantage, alone or in combination with other activities, hence also the importance of the links between activities.

3. Research methodology

3.1. Research design

The research design is a general strategy of the research that defines how the data would be collected and analyzed for the study. There are a number of research designs available to a researcher which it can select where every design serves a different purpose. These research designs include the exploratory, meta-analysis, descriptive, mixed methods, case study and experimental research designs (Schmidt & Hunter, 2014). As far as the current study is concerned, that is, to explore the differentiation of big companies in a competitive market in Pakistani context; there are limited results as to what has been done so far. Therefore, the exploratory research design would be implemented. It is also supported by Brown & Fletcher (2017), who argue that an exploratory research design supports to explore the phenomenon that has not been explored in detail before. Correspondingly, for the current research, this type of research design would support the researcher to complete the research by exploring the facts that have never been discovered.

3.2. Research methodology

There are basically two research methods the quantitative and qualitative; the quantitative research deals with the objective resolution of the problem statement whereas the qualitative deals with the subjective evaluation (Henriksen, 2012; Taylor, Bogdan & DeVault, 2015). Besides, the researcher can also use a mixed method approach by collecting data in both the forms. For the current study, the quantitative research is undertaken because it would enable the researcher to conduct the research directly from the customers and to determine whether they want differentiation in the product. The quantitative research would also determine the facts that are left unexplored in the context of Pakistan where it particularly evaluates whether the employees prefer differentiation over cost-leadership. It will also quantify if the differentiation strategies used by the companies are successful.

3.3. Data collection

As far as data collection is concerned, there are a number of research instruments that enable the researcher to collect a particular type of data. According to (Brown & Fletcher, 2017) the best tools for collecting quantitative data include questionnaires, surveys, polls and online surveys whereas the qualitative data is gathered using interviews, observations and focus group discussions. For the current study, because it is quantitative in nature, therefore, the particular data collection method is questionnaire survey. The reason for using a questionnaire survey is that it collects data from the consumers regarding the research context and it is simple to design

3.4. Questionnaire design

With the quantitative method, the undertaken data collection tool is questionnaire survey. There are two types of questionnaires; the open-ended that collects the qualitative data, and the close-ended that collects the quantitative data (Greenland, 2013; Joshi, Kale, Chandel & Pal, 2015). Since the current research is quantitative therefore the close-ended questionnaire would be used to collect data from the consumers. The questionnaire was designed using the Likert's scale questionnaire that has five options for a question ranging from strongly agree to strongly disagree

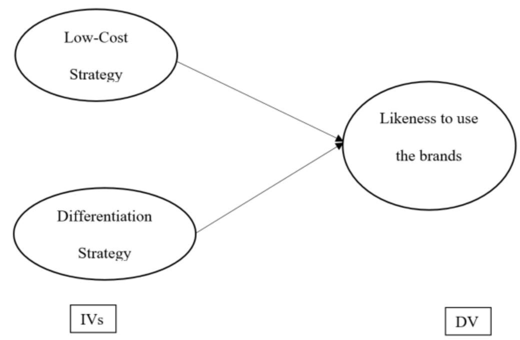
(Hartley, 2014; Sparks, 2015). The questionnaire is comprised of 12 questions where first four questions cover first research question, and the latter four questions cover second research question, and the last four questions measure the decision-making behavior of the consumers towards purchasing a differentiated product or a low-priced product. The questionnaire is self-administrative where the participants can fill it without the guidance and interruption of the researcher (Lee, Henriksen, Rose, Moreland-Russell & Ribisl, 2015; Taylor et al., 2015). The designed questionnaire aimed to analyze the differentiation strategies of two big companies in Pakistan who compete with each other in the frozen dessert sector.

3.5. Sample and sampling design

The sample refers to the smaller proportion of the population that has all the characteristics of the population. It is also defined by Greenland, 2013; Voss, Zimmermann & Zimmermann, 2016 that the sample includes a smaller group of the population that reflects all the features of the population and the researcher conducts the study on the undertaken sample. According to Corona, Saez & Stoffel (2014) and Greenland (2016) sampling is done to conduct the study from a smaller group because it is complex and time-consuming to consider entire population for conducting the study. Therefore, the researcher conducts the research on a smaller group that represents the population. The researcher can use probability or non-probability sampling technique for sampling. In the probability sampling, there is an equal chance of the population being selected to participate in the study (Lotterhos & Whitlock, 2015). However, the non-probability sampling is performed for the researchers that should be performed on a selected population.

For the current research, the undertaken sampling technique is non-probability sampling and under this category, the convenience sampling would be used to collect data from the consumers. Particularly, the convenience sampling enables the researcher to collect data from the respondents who can contribute effectively in the study for the research context (Xie & Lu, 2015). Similarly, the researcher would conduct the study from 100 consumers that are a sufficient sample to conduct the study to achieve the objectives of the research. Moreover, with the convenience sampling technique, the researcher would be able to approach the customers who are within the vicinity to understand their views. The research is aimed to be conducted from 100 consumers in one of the supermarkets in Karachi, Pakistan.

3.5.1. Model for the study



3.6. Data analysis

The analysis and presentation of data is an essential activity in the research because without interpreting the data the research cannot be concluded effectively. The analysis of the data takes place after the data has been collected by the researcher. Once, the data has been collected the researcher would evaluate it. Since, the present research is quantitative therefore the statistical analysis would be used (Huang, Liu & Bowling, 2015). Particularly, the data collected through the Likert's scale questionnaire would be evaluated using SPSS where ANOVA tests would be conducted to determine the significance between the two variables that are consumer's decision making and differentiation strategy of the company offering frozen desserts.

3.7. Reliability testing

The reliability of the research instrument is measured to ensure that whether it measures consistently what it is supposed to measure. To measure the reliability there are different ways and statistical methods. However, the appropriate tool to measure the reliability of the current instrument is through is internal consistency reliability that measures how well the items in a test measure same construct (Heale & Twycross, 2015). The internal consistency is denoted by alpha and the value of alpha closed to 1 is accepted for a reliable instrument. For the current research instrument that surveys instrument the reliability found is 0.762 (as illustrated in below Table 1 and 2) which indicates that it is a reliable instrument.

Table 1 Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Table 2 Reliability Statistics

Cronbach's Alpha	N of Items
.762	12

4.1. Evaluating the questionnaire survey findings

Question 1

The first question in the survey that was inquired from the customers was whether they find the Magnum ice cream brand as outstanding in comparison to the other brands available in the market. The results obtained on this question indicate that there were 27% of the respondents who strongly agreed and 53% agreed whereas a significant proportion of 16% had neutral views whereas only 4% of the respondents have unfavorable views who disagreed with the state as shown in Chart 1. In sum, the overall findings were that about 80% of the consumers agreed to the statement that they find Magnum as outstanding in comparison to others.

Question 2

The second question in the survey inquired whether the Magnum ice cream is expensive in comparison to other brands. The response of the consumers showed a significant agreement where 23% consumers strongly agreed and 44% agreed to the statement which makes cumulative positive views of 67% whereas there were 28% neutral views and only 5% of consumers showed disagreement. The overall findings indicate that majority of the consumers believe that the Magnum ice cream is expensive since it is a differentiated product. This finding is in relation to the literature finding where Porter & Heppelmann (2015) also argue that the differentiation is associated with a greater value and price because it has added value and features.

Question 3

The third question of the questionnaire was aimed to find whether Magnum offers an appropriate value for the price. The results obtained on this question revealed that that the majority of the customers agree that they find the price of Magnum appropriate for the quality and value offered. Particularly, there are 9% strongly agreed responses and 49% of agreed responses whereas a significant proportion of 31% also has neutral views. Nevertheless, only 11% of the responses were unfavorable. The findings reveal that the consumers agree to pay a higher price for the differentiated product like Magnum that is consistent with findings of (Gabrielsson et al., 2016) that consumers would pay a higher price for an added value.

Question 4

The fourth question of the questionnaire was aimed to inquire about the consumption of Magnum ice cream due to its rich quality and taste and the consumers agreed to the statement. Particularly, there were 17% of the respondents who strongly agreed and 48% agreed with the statement whereas a significant proportion of 30% had neutral views and 4% had disagreed and 1% strongly disagreed with the statement. Together, the results reveal that there are many aspects that the consumers consume Magnum ice cream apart from its rich quality and taste. It is also consistent with the finding of (D. Banker et al., 2014) that a differentiated product has value-added features and services that are also found in the results where consumers disagreed that they consume product only for taste and quality.

Question 5

The fifth question of the questionnaire survey inquired the respondents regarding the Omore brand of ice cream whether consumers believe it as an outstanding brand in the market. The findings revealed that 10% strongly agreed and 39% agreed with the statement whereas 38% had neutral views. Besides, there are 12% respondents who disagreed and 1% strongly disagreed. Nevertheless, the majority believed that Omore is an outstanding brand beside Magnum as reported by the consumers.

Question 6

The sixth question inquired from the respondents whether the Omore ice cream is expensive in comparison to the other brands available in the market. The results of the consumers reveal an unfavorable response where the majority of the respondents disagreed 22% and 2% strongly disagreed with the statement. There were only 8%

respondents who agreed whereas 48% had neutral views. Conclusively, the findings revealed that consumers believe Omore as not an expensive brand and there are more expensive brands of ice cream in the market.

Question 7

This question of the survey inquired from the respondents regarding the value of Omore ice cream whether it is appropriate for the price that is offered by the company. In response, the majority of the consumers agreed with the statement that they find the price for the product justified for the value and quality delivered by the company where 9% strongly agreed, and 43% agreed whereas 41% had neutral views on the topic. On the other hand, there were only 6% respondents who disagreed, but none of the respondents strongly disagreed. To sum up, the findings indicated that consumers value the product because it is not highly priced and consider it fair value for the price.

Question 8

This question of the survey inquired from the respondents regarding the consumption of Omore ice cream whether they consume it because it is rich in quality and taste in comparison to others. However, the results relates to a study findings of Mathooko & Ogutu, 2015 that there is added value into the product which differentiates it. Particularly, there were 55% respondents who agreed out of them 45% strongly agreed and 10% agreed. Only 8% disagreed with the statement.

Question 9

This question of the questionnaire inquired to measure the decision-making behavior of the consumers between the two prominent brands that include Walls Cornetto and Magnum against the price. The response of the consumers was indifferent where majority revealed that they would prefer Walls' Cornetto over Magnum as far as price is concerned. There results shows the response: 21% strongly agree, 43% agree, 23% neutral, 11% disagree, and 1% strongly disagree.

Question 10

This question was inquired to determine the preference of the consumers between Walls' Cornetto and Magnum when quality and taste are concerned. The findings were rather one-sided where 23% strongly agreed, and 46% agreed that they would prefer Magnum over Cornetto when taste and quality are concerned. These findings also reveal that differentiation created by the company is successful where the consumers believe that the taste and quality of the Magnum are higher than its counterparts.

Question 11

This question of the survey inquired from the respondents regarding the preference of ice cream brand between Omore and Cornetto against the price. There were variable responses of the consumers for this question where 16% strongly agreed, and 33% agreed whereas 15% disagreed and 5% strongly disagreed and 30% were neutral. These results reveal that the consumers can prefer any brand between Walls Cornetto and Omore as far as price is concerned and it also means that among consumers both the brands range between the similar price groups.

Question 12

The last question of the survey inquired the consumer's decision between Engro Foods brand Omore and Walls brand Cornetto as far as quality was concerned. The responses of the consumers were identical where 17% strongly agreed, and 34% agreed that they would prefer Omore over Cornetto as far as quality and taste are concerned. From these findings, it is also revealed that Omore is a differentiated product in comparison to Cornetto although it has similar price ranges. These are the reasons Omore is preferred by consumers over Cornetto.

To sum up the findings of the questionnaire survey, it can be said that the consumers prefer a differentiated product where the majority had selected Magnum when it was compared with Cornetto and selected Omore when it was compared with Cornetto. Nevertheless, the findings also were consistent with the literature that the consumers were attracted towards a differentiated product and preferred it (Mathooko & Ogutu, 2015). When it comes to price, the consumers in the Pakistani market valued Cornetto because it has low price and when it comes to taste they have selected Magnum, and they have also considered rich in taste and quality among the other brands in the market.

4.2. Determining the impact of consumer's decision making towards differentiated strategy

The findings from the analysis of the data obtained from the respondents through the survey were tested with SPSS and the regression results were drawn. The findings indicate a significant relationship between the two variables. Particularly, as indicated in Table 2 and 3 the analysis of variance is conducted for consumer's decision making and differentiated strategy of the company. The findings can be seen in the table that there is a significant value of differentiated strategy of the company and consumer's purchase decision that has a significant value below 0.05 in the Sig column that indicates value .000. These results imply that there is a linear relationship between the two variables and the differentiated strategy of companies because it is preferred by the consumers. These results also indicated that the future predictions can be done on the basis of these values.

Table 2 Tess results for differientiation strategy

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	276.627	1	276.627	22.487	.000[b]
	Residual	1205.563	98	12.302		
	Total	1482.190	99			

a. Dependent Variable: Likeness to brands
b. Predictors: (Constant), Differentiation strategy

Table 3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	14.260	.949	
	IV1	.632	.352	.170
	IV2	1.341	.313	.407

a. Dependent Variable: Likeness

4.3. Determining the impact of consumer's decision making towards low-cost strategy

To know the low cost strategy of the companies there tests were conducted on two variables that were between consumer's decision making and low-cost leadership strategy of the company. Particularly, as indicated in Table 4 and 6 the analysis of regression test is conducted for consumer's decision making and low-cost leadership strategy of the company. The findings can be seen in the table that there is a significant value of low-cost leadership strategy of the company and consumer's purchase decision that has a significant value below 0.05 in the Sig column that indicates value .000. These results imply that there is a linear relationship between the two variables and the differentiated strategy of Omore from Engro Foods has a significant value because it is preferred by the consumers.

Table 4 Test Results for Low Cost Strategy

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	365.879	2	182.940	15.896	.000[b]
	Residual	1116.311	97	11.508		
	Total	1482.190	99			

a. Dependent Variable: Likeness to Brands
b. Predictors: Low-Cost strategy

Table 5 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	14.163	1.073	
	IV3	0.614	0.347	0.163
	IV4	1.414	0.331	0.394

a. Dependent Variable: Likeness

4.4. Evaluating the successfulness of the differentiation strategy of competing companies

The findings from the questionnaire survey revealed in the results from question 8 through 12 that the consumers prefer a differentiated brand Magnum and Omore over other brands in the market but when it comes to the price they also valued the product with lower price. In other words, the consumers in Pakistani market in the frozen dessert or ice cream sector do not only value differentiation, but they also value the price. Nevertheless, the successfulness of the differentiation strategy was realized when the consumers claimed that Magnum is expensive and they have also claimed that it is fair value for a price. Therefore, it can be claimed that the differentiation strategy is successful for Unilever Pakistan where the consumers prefer Magnum for its taste and quality that are its features.

Besides, the consumers also claimed that apart from these two features there are other factors that enable them to consume Magnum which is consistent with the study of (Gordon, 2013; Mathooko & Ogutu, 2015) that the products offer added value apart from being different. On the other hand, the consumers preferred Omore over Cornetto when they were compared price, quality, and taste. It also evidences that the consumers believe Magnum and Omore as a differentiated brand when it comes to quality and taste. Therefore, it can be said that the differentiation strategies of the competing companies are successful particularly of Unilever Pakistan for its Magnum brand that is highly valued by consumers. Notably, it was also found that Unilever Pakistan through its Cornetto brand also captures the Omore market that was illustrated and claimed that they would go for Cornetto; but the consumers preferred Magnum when it comes to taste and quality, which creates value for the consumers. In short, the findings evidence that differentiation strategy Unilever Pakistan for its Magnum is a success among Pakistani consumers in the frozen dessert market.

5. Discussion, conclusion and recommendations

5.1. Discussion and conclusion

The organizations in the contemporary business environment focus on creating differentiation strategies to outperform their competitors. In this essence, the purpose of the research was to analyze the differentiation strategies of the big companies that compete with each other. The undertaken companies were the big brands in the ice cream sector of Pakistani market that include Magnum and Walls from Unilever Pakistan and Omore from Engro Foods. The primary research was conducted using a survey questionnaire that was conducted by 100 consumers in Pakistan. The literature was also briefly discussed that identified the competing strategies of (Porter & Heppelmann, 2014; Shani & Chalasani, 1992) and it also identified that most of the companies compete with either differentiation or low-cost leadership. Besides, it was also found in the literature that the companies do not only achieve differentiation by creating value in the product, but they also add features to the product to create differentiation (Gabrielsson et al., 2016). Another finding was that the companies could achieve a sustainable competitive advantage over their counterparts when they create a product that is valuable, rare, difficult to imitate and organized by utilizing resources effectively.

The findings from the questionnaire survey revealed that the consumers in Pakistan do value the differentiation in products because they preferred Magnum over Cornetto when it comes to taste and quality and they also believed that Magnum offers fair value for a price although it was found expensive among consumers. The research also evidences that there is a significant impact of consumer's decision making on differentiation strategy of the company and also the significant relationship between decision making and low-cost leadership was also found. In other research questions, it was also found that consumers not only prefer differentiated products but when it comes to price they prefer the product that offers good value at a low price that was illustrated in the decision of consumers where they preferred to purchase Omore over Cornetto believing it offers better value. Conclusively, the findings revealed that the differentiation strategy of Unilever Pakistan for its Magnum brand is a successful strategy because the company serves with differentiation with Magnum brand and for low-cost it serves with Cornetto brand.

5.2. Recommendations

This research was associated with a few limitations; therefore, it is essential to propose recommendation for further research. Firstly, the study was exploratory so it would have been suitable to conduct the mixed method research by collecting data in both the forms; however, due to time constraint it was not possible to conduct interviews from the consumers. Therefore, it is recommended to conduct a future research with mixed method approach and conducting interviews with the consumers to explore the consumer market of ice cream in Pakistan more effectively.

Appendices

Appendix A: Questionnaire survey

This survey measures the behavior towards the company's competitive strategies for their frozen dessert or ice cream product. Kindly mark the boxes that best describe your thoughts and experiences for all questions.

Preference of differentiated product (brand of Unilever Pakistan)

1. I find Magnum ice cream as an outstanding product in comparison to other brands available in the market.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

2. I find Magnum ice cream expensive in comparison to other brands available on the market.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

3. I find quality and value of Magnum ice cream appropriate for the price offered by the company.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

4. I consume Magnum ice cream because it is rich in quality and taste in comparison to other brands.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

Likeliness towards Differentiated Product (Brand of Engro Foods)

5. I find Omore ice cream as an outstanding product in comparison to other brands available in the market.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

6. I find Omore ice cream expensive in comparison to other brands available in the market.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

7. I find quality and value of Omore ice cream appropriate for the price offered by the company.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

8. I consume Omore ice cream because it is rich in quality and taste in comparison to other brands.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

Preference between a differentiated product and lower priced product

9. I would prefer Magnum over Walls' Cornetto as far as price is concerned.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

10. I would prefer Magnum over Walls' Cornetto as quality and taste are concerned.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

11. I would prefer Omore over Walls Cornetto as far as price is concerned.

    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

12. I would prefer Omore over Walls Cornetto as quality and taste are concerned.

    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

SM

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Sentiment Analysis of Customer Data

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Abstract

The value of a customer for the company is not measured only by the monetary effect, but also by the degree of its satisfaction. Satisfied customers spread positive word of mouth, while dissatisfied customers spread negative one (in online or offline environment). Their voice shapes company reputation and the reputation is one of the key parameters in choosing a product, service, or a company.

In order to look into customer satisfaction, companies need to get certain feedback from consumers. The traditional way of collecting feedback from consumers is questionnaires. However, the way in which consumers express their opinions on social media opens up new opportunities and makes it easier for companies to cover a larger number of consumers, to collect data of interest and to continuously monitor the brand.

Social media sites have significantly changed the nature of human activities, interactions and ways of disseminating information. Consumer behavior has changed accordingly. In search for information about products and services consumers are planning to buy or use, offline sources of information are increasingly replaced with online sources and e-WoM. Before making a purchase decision, consumers visit many sites and read the content and comments that other users have generated. Within these contents – texts that users voluntarily post on the Internet and make it publicly available – users freely express their views, opinions, describe their consumer experience, the problems they have encountered and the way in which the problems were addressed, they point to the aspects of products or services they are satisfied or dissatisfied with. These contents shape the opinions of future consumers in great extent and affect their consumer actions. Numerous studies have confirmed the impact these sources have on consumer behavior:

• Consumers appreciate opinions of other individuals and trust them more than the company's promotional campaigns,
• Consumers have equal trust in online comments and reviews as in personal recommendations from friends,
• Online comments on products and services are on the third place according to the influence on buying decisions (after coupons and discounts).

Each business can benefit from analysis of social media content since it comprises useful feedback from consumers in form of expressed opinions and attitudes. Opinions and attitudes are extremely subjective. Due to subjectivity it is necessary to analyze a collection of opinions of different people instead of a single opinion which expresses a subjective view of an individual. In addition to this large number of available sources, the amount of data makes it impossible to manually process them and identify the general pattern, problem or source of (dis)satisfaction. Hence, automated analysis of unstructured content from social media sites is required, i.e. the application of sentiment analysis or opinion mining.

Sentiment analysis is a young research area which has rapidly developed during the past 10 years and it has achieved significant commercialization. The surrounding industries also experienced significant expansion. Sentiment analysis allows companies to analyze public opinion, attitudes and emotions directed at a particular entity (e.g. a particular person, a political candidate, a party, a law, a company, a specific product, or a product feature) which expresses particular sentiment or points to (usually positive, negative or neutral), as well as all variations and gradations of the sentiment. In addition to the significance of sentiment analysis for business, this paper deals with sentiment analysis process and underlying data mining techniques.

Keywords

Sentiment analysis, online reviews, user-generated contents, data mining techniques.

Introduction

Consumer behavior when searching for information about products and services has changed significantly. Offline resources have been replaced by means of word-of-mouth e-marketing, such as social media sites or sites for online reviews of products/services – online comments (Gruen et al., 2006). When making a purchase decision, consumers consult publicly available content on the Internet, or online comments, to get insight into other consumers' attitudes and experiences regarding the product/service. The subject of online comments varies from technical devices (computers, cameras, mobile phones, etc.), books, hotels, restaurants, cars to specific services such as education. After coupons and discounts, online comments have the most influence on purchasing decisions (Yang et al., 2015/2) and consumers value and trust the opinions of other individuals more than the company's promotional campaigns (Berthon et al., 2012; Pitt et al., 2002). Furthermore, there is no difference in consumers' level of trust in online comments and their trust in personal recommendations of a friend (Park et al., 2007; Gligorijevic & Luck, 2012). In addition to the impact on consumers' attitudes and actions, online comments increase the level of consumers' trust in the company, directly affect which companies customers choose among competitors and influence the success rate of attracting new consumers. It is of utmost importance for each company to respond promptly and adequately to complaints and praises of its consumers and to manage carefully the company's online reputation, as negative online comments could have unfavorable business implications – even a sole unhappy consumer can ruin the reputation of a company (Tripp & Grégoire, 2011). Consumers are inclined to choose companies with a positive reputation and are willing to pay more for their products. The degree to which consumers are engaged in activities on a company's social media reflects their perception of the reputation of a company. Per definition engagement contains a cognitive aspect (e.g. the consumer is interested in the company's activities), a behavioral aspect (e.g. participation in activities) and / or the emotional aspect (e.g. positive attitude towards the company's activities) (Dijkmans et al., 2015). Achieving a high degree of consumer engagement promotes the company's reputation and brand loyalty and influences purchasing decisions.

The authors (Hudson et al., 2015) emphasize the relevance of emotions in the process of building relationships between consumers and a brand, as well as their impact on the readiness of consumers to recommend the product. Research on how emotions are processed confirms that emotions are formed before any processing of information and that consumer behavior is strongly influenced by them (Hudson et al., 2015). Factors with the most powerful overall impact on the individual's purchasing intentions are emotional factors that result in love that is based on sensory pleasures (Pawle & Cooper, 2006). In other words, it is suggested that the key emotional trigger for strengthening the relationship between consumers and a brand is creating a strong intimate relationship with the brand. Due to the fact that consumers today react more positively to content distributed on social media than on classic advertising campaigns, their emotional response to the first strengthen the brand's connection to customers. The same result is achieved when consumers are given the opportunity to interact with the company on social media through sharing brand knowledge, consumer experience or suggestions. Consumers' expectations lead to an emotional response, which results in a positive or negative feeling, thus shaping their satisfaction, trust and loyalty.

With an adequate analysis of the online content that users generate and especially by analyzing the emotions hidden in it, companies can acquire critical information for improving their business. Sentiment analysis is an approach to data analysis that allows companies to analyze a variety of publicly available opinions, sentiments, attitudes and emotions directed to a specific entity. An entity may be, for example, a particular person, a political candidate, a party, a law, a company, a specific product or some of its characteristics. User-generated content expresses or points to a certain sentiment (usually positive, negative or neutral, as well as all variations and gradations of the sentiment). Through sentiment analysis companies familiarize themselves with their customer base at a higher level, which includes familiarizing with the customers emotions, which further enables optimization of marketing messages, trends forecasting, product/service development and monitoring of the companies' online reputation. By introducing a customer perspective into services and business transactions, companies can deliver a product/service that is most suited to consumers' needs.

In addition to the importance of sentiment analysis for business operations, we talk about the flow of sentiment analysis and data mining techniques in the background of this process. The paper is structured as follows. The next section describes the process of sentiment analysis. The second section gives an overview of the basic methods and techniques used in sentiment analysis of a content, while the third section describes diversified applications of sentiment analysis of online comments. Additionally, this section illustrates the sentiment analysis conducted on collections of comments from three leading sites in the domain of e-commerce, entertainment and ranking of local restaurants (Amazon, IMDB, and Yelp). The last section sums up the author's conclusions.

1. The process of sentiment analysis

The sentiment analysis consists of three tasks that are described below together with the challenges of these tasks.

1. ***Creating resources for sentiment analysis.*** Supervised learning techniques for data mining are at the heart of sentiment analysis. They require pre-processed training sets that include clearly defined and distinguished examples of each class. Text data collected from social media sites have to be adequately prepared in order to be presented to the selected data mining methods and techniques. The task of creating the resources for sentiment analysis usually requires including additional metadata to a set, i.e. by text annotation. Metadata is defined as information attached to statements expressing sentiment, whereas annotation means each metadata tag used to mark the element of a data set. The content in which the sentiment is expressed can be annotated by its polarity (positive, negative, neutral), the goal of the sentiment – the so-called aspect, or by other semantic, syntactic or lexical information. In order to achieve an effective training of the learning algorithm, the annotations have to be accurate and relevant to the task. For this reason, the annotation of texts is a critical step in the development of applications for natural language processing (Pustejovsky & Stubbs, 2012). Sets of texts are called corpora, and a set of texts annotated based on the same specification is called an annotated corpus. The annotation of a corpus is valuable primarily because it creates a basic knowledge base for training machine learning algorithms (MLA) for the implementation of sentiment analysis, as well as for validating the theory of phenomena in texts (structural, logical, semantic, and syntax) (Hovy & Lavid, 2010). The main challenges in the process of creating resources for sentiment analysis are the ambiguity of words, the granularity (the opinion can be expressed by words, sentences or whole phrases), differences in the way of expressing opinions in different types of texts (blogs, newspaper articles, content from the forum, etc.) and so on. These challenges impose the need to annotate each type of text that is subject to analysis separately, as well as the need for the existence of necessary annotation resources for different languages (Montoyo et al., 2012).
2. ***Classification of text according to the polarity of the expressed opinion.*** The early classification attempts were made on online comments in the film industry (Pang et al., 2002), online comments on technical products, books, alternative music and films (Dave et al., 2003) and on online comments within the automotive and banking industry and on tourist destinations (Turney, 2002). The classification was done at a rough level of granulation – at document level (comment) – based on associated sentiment indicators, such as the number of stars or the presence of positive and negative adjectives and adverbs. In these first attempts the central concept was based on the automatic learning of the sentiment classification model using a set of previously categorized documents as training data. Additional annotation of collected documents was not required. The classification considered the whole document and the starting premise was that one document discussed one topic. The developed models were used to classify or predict the sentiment category (positive, negative, and, rarely, neutral) of novel documents. The demand of many applications to provide enough detail about the prevailing customer opinion on the different aspects of the observed entity is often not satisfied by this type of classification (Medhat et al., 2014). In addition, the rapid increase in the number of online user comments makes it difficult for companies and consumers to

obtain a comprehensive picture of the prevailing customer opinion. Hence, the traditional sentiment analysis at the document level has been abandoned and the number of studies that examine the possibility of a more detailed analysis of thoughts and feelings, at the level of the word/phrase (Breck et al., 2007; Zirn et al., 2011), sentence/paragraph level (Gamon et al., 2005; Kim & Hovy, 2006; Wiegand & Klakow, 2009) or part of the sentence level (Wilson et al., 2005; Choi & Cardie, 2008) is increasing.

Classification at the sentence level treats each sentence separately and starts from the assumption that each sentence contains exactly one opinion (positive, negative or neutral) (Jagtap et al., 2013). This approach requires separating objective from subjective sentences prior to the sentiment analysis, which then determines if attitudes expressed in subjective sentences are positive or negative. Classification at the word/phrase level is accomplished by determining the polarity of the word/phrase used for classification. In most online reviews, more aspects or more product characteristics are mentioned, different entities are compared, and various sentiments about them are expressed. The early sentiment analyses mentioned above are not adequate in such cases, because they focus on the discovery of the prevailing sentiment, not the aspect and therefore rather reveal the customers' general attitudes than the exact customers' preferences (Liu, 2012; Broß, 2013).

For more detailed analysis, an aspect-oriented approach has to be applied, which analyzes the customers' sentiment according to an individual aspect /characteristic of the product. The starting point of the classification at the aspect level is an opinion based on a positive or negative sentiment referring to a person, object or aspect (the goal of the sentiment). The basic task is to determine the sentiment about the entity or aspect (Liu, 2012). This is the reason why the classification at the aspect level enables more detailed analysis of the sentiment according to the aspects and identifies the customers' preferences more precisely. In order to conduct an aspect-oriented analysis of the sentiment, it is necessary to create representative corpora by the annotation procedure.

The main challenges of classifying the text are manifested in the need for contextual analysis of the expressed opinions. Such classification requires analysis at different levels (lexical, syntactical, semantic and pragmatic), the utilization of robust, supervised, semi-supervised or unsupervised methods, the analysis of the influence of negation and its scope, detection of irony and detection of implicitly expressed sentiment in objective sentences (Montoyo et al., 2012). Concerning the aspect-oriented analysis, the key challenge is to identify the parts of the text in which the opinion is expressed and the span of the sentiment expression, as well as the target of the expressed opinion (on who/what is the opinion on).

3. ***Application of sentiment analysis.*** This task can be a stand-alone task, combined with other tasks of natural language processing (summing up opinions, finding opinions, etc.), or a part of a complex application (for example, ranking the product according to the expressed opinion of users in intelligent recommendations or trend detection systems). The main challenge that this task needs to tackle is the adequate combination of various sentiment analysis techniques and methods from the area in which it is applied (Montoyo et al., 2012).

2. Sentiment analysis methods and techniques

The task of sentiment analysis in its basis is the task of classifying expressed feelings, usually to positive or negative ones. Neutral opinions are expressed less frequently than positive/negative ones and have significantly less or no influence on the other customers' opinions. Therefore, companies are often not interested in them. The sentiment classification techniques can be divided into machine learning techniques that use linguistic attributes, a lexicon-based approach (vocabulary or corpus), which accepts a list of known and previously prepared sentiment expressions as an input, and a hybrid approach that combines the previous two. Figure 1 shows the most commonly used techniques of the sentiment classification.

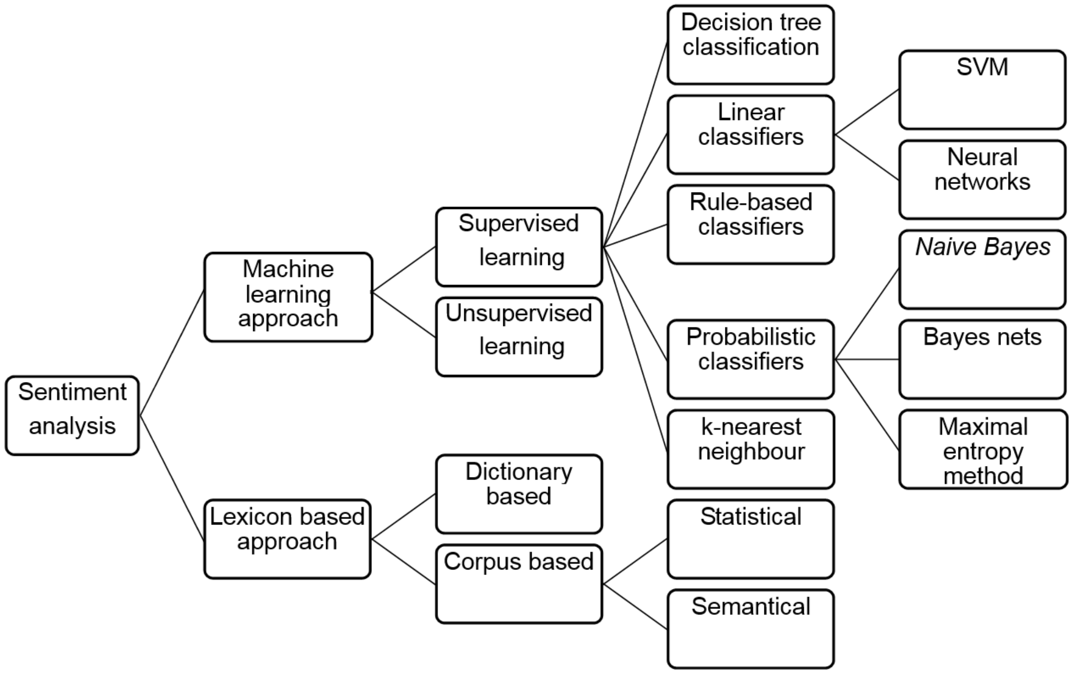

Figure 1 Sentiment classification techniques
Source: Medhat et al., 2014

Machine learning techniques are divided into supervised and unsupervised learning. Supervised learning methods require a large amount of pre-processed (tagged) training data, while unsupervised learning methods do not impose such a requirement.

Classifiers generated by supervised learning methods are created automatically based on the characteristics of the categories from the collection of previously classified and labeled training documents. In the development of classification models with supervised learning, the following issues should be considered (Feldman & Sanger, 2013):

- Which categories should be used in the classification of instances?
- Provide appropriate training sets for each category.
- Decide on the attributes that describe each instance. Since most of the supervised learning algorithms can focus on relevant attributes, it is advisable to generate as many attributes as possible.
- Which algorithms should be applied? The most commonly used algorithms of supervised learning, as shown in Figure 1, are decision trees, linear classifiers, probabilistic classifiers, rule-based classifiers and k-nearest neighbors.

Usually it is easy to collect a large amount of data from the Internet, but it is difficult to prepare a sufficient number of clearly separable and labeled documents (for example, documents containing exclusively positive or negative comments). For this reason, unsupervised learning methods are often used. Unsupervised sentiment analysis can be based on sentiment words, patterns of syntax identified in the sentiment (Turney, 2002) or sentiment lexicons.

Lexicon-based approaches use sentiment dictionaries to recognize sentiment in texts. There are three basic ways of collecting and making a sentiment lexicon: 1) Manual access, which requires intensive work and is time-consuming. It is rarely applied alone, but rather as the final test of an automated approach to avoid errors that automated approaches sometimes make (Medhat et al., 2014); 2) A dictionary-based approach starts from manually collected basic sentiment words that are associated with the sentiment orientation. Afterwards, adequate synonyms and antonyms are searched in the dictionary (WordNet or other online dictionary) 3) Corpus-based approaches start from the list of sentiment words specific to the domain that is the subject of the analysis and search other sentiment words together with their contextual orientation in a large corpus (Medhat, et al., 2014).

3. Diversified objectives and approaches to sentiment analysis

Social media sites offer their users a free exchange of thoughts and experiences about the purchasing process, product and services' characteristics and quality. Because of their importance and widespread distribution, online comments become a key type of user-generated content and take a central place of research in the sentiment analysis domain. The emphasis of this research is on connecting different business objectives and desired benefits of the analysis with diversified approaches, to obtain best results. For companies, online users' comments represent an excellent source of information for competitive intelligence used for developing and improving marketing activities. Through customer comments, companies receive sincere, impartial feedback on their products, as well as on their competition's products. In this way, the market segments for which the product is most suitable can be identified along with the mismatches between offered products and customers' preferences and differences in the capabilities of the company and its competition. By interpreting a large amount of data and associated feelings, companies can improve business decision-making by developing new ideas and solutions for their technological or economic problems (Balahur, 2011).

From the customers' point of view, online comments provide useful information that shorten the search time and make purchase decisions more efficient (Yang et al., 2015/2). More than 80% of customers expect the option to consult other customers or professionals before the act of purchase to be implemented on the seller's website (D'Avanzo & Kuflik, 2013). Hence the development of the sentiment analysis applications for the needs of e-commerce is a wide research field. E-commerce sites exploit the possibilities customers' online reviews offer; they analyze, classify and summarize opinions from product reviews that customers visiting the site can use to compare or recommend a product, or consult each other.

The authors D'Avanzo and Pilato (2015) introduce a cognitive-based procedure that analyzes customer opinions from specific types of marketing and sums them up visually to help resolve the problem of customer being overwhelmed by large amounts of online comments and speed up their purchasing activity. The approach mimics the "zone of proximal development" of Vigotsky[1], which is widely exploited in collaborative learning communities.

Recommendation systems based on online comments are typical applications incorporated into e-commerce sites. Thanks to these systems, users of the site do not search the comments, but get recommendations of a product that best suits their preferences. However, these systems heavily rely on structured metadata when providing recommendations, such as star rating estimates, and ignore text content despite the text being the most important source of information in online comments.

The authors Ganu et al. (2009) believe that the customer experience would be significantly improved if the way, in which the content of online comments is structured would be considered. This means also considering the parts of the comments on certain characteristics of products and the sentiment of the comments on each characteristic.

The authors Hu and Liu (2004) as well as Kim et al. (2014) and Broß, (2013) describe different approaches to product reviews analysis. The approach described by Hu and Liu (2004) constitutes of three steps of efficiently summarizing online product reviews. Their approach entails summarizing comments, which allows potential customers to easily see the opinions of existing customers about the product of interest. At the same time this step allows manufacturers to combine reports from various retail sites to see the general public's attitude towards their own or competitors' products. The authors have developed a system that allows users to summarize comments on the product as a whole, as well as on individual product characteristics, thus gaining a better insight into positively and negatively assessed aspects. In the first step, only those characteristics that consumers expressed their opinions on are analyzed, through the application of data mining and natural language processing (NLP) methods. The next step identifies all sentences that contain expressed opinions and determine their sentiment. NLP techniques are used to identify a set of adjectives that usually express an opinion, and for each identified sentiment word its orientation (positive or negative) is determined

[1] The distance between the most difficult task that one can solve independently and the most difficult task that one can solve with someone's assistance.

using the bootstrapping[2] technique and WordNet[3]. In the last step, the results are summarized.

The authors Yang et al. (2015/1) also dealt with the problem of summarizing reviews. Their approach is based on the ontology tree which is the starting point for extracting the most representative expressions and opinions of customers about the product by forming attribute-sentiment pairs. Their system then calculates the polarity of these pairs based on entropy and gives a comprehensive report to producers or customers.

The authors Kim et al. (2014) dealt with the classification of the sentiment according to the aspects of the product. Their methodology enables the identification of positive and negative opinions about products. Unlike their predecessors, the authors have achieved a detailed measurement of expressed opinions, which allows determining the information relevant to the particular mobile phone device, as well as the part of the specification of the mobile phone that is its competitive advantage in relation to other products. The authors used a domain dictionary composed of 500 words that were associated with values ranging from -5 to +5 for each sentiment word. This method proved difficult for implementing in other domains.

In his paper, Broß (2013) dealt with an aspect-oriented sentiment analysis, which involves identifying the aspect of the product written online comments refer to and classifying the content as positive or negative. In the sentiment classification, a lexicon-based approach was applied together with supervised learning techniques. The author also examined the possibility of automatically generating sentiment vocabulary according to the predefined aspects of the product, as well as dictionaries of all sentiment concepts for the given domain.

3.1. The art of modeling for better performance – an illustration

This chapter illustrates the various modes of sentiment analysis application on online product reviews and how these approaches affect the performance of the classification model. Under various modalities we understand diversified sources of data, different classification models and different performance measures available to analysts, which they select exclusively based on their experience and a few heuristic rules in the domain of sentiment analysis. Data for the analysis is taken from the research conducted by Kotzias et al (2015) and refer to reviews on mobile phones, movies and restaurants. Each set of comments is made up of randomly selected 500 positive and 500 negative comments downloaded from Amazon, IMDB and Yelp sites, that the authors have prepared for research purposes - labeled and preprocessed for the classification. Each set was divided into a training set (80% of reviews) and a test set (20% of reviews). The preprocessing of data from the source files in the RapidMiner[4] tool is shown in Figure 2.

In the first step (the Transform Cases process), the conversion of uppercase letters to lowercase ones is conducted. The second step (the Tokenize process) transforms the content of a document into a list of words. The third step (the Filter Stopwords process) filters frequent words that do not bring new knowledge. The fourth step (the Generate n-grams-terms process) allocates bigrams (two words in a row) and the last step (the Filter tokens by length process) extracts words that are composed of one or two characters and those that have more than 25 characters. The excerpt from the data set after the pre-processing is shown in Figure 3.

The term vector is created using the TF-IDF measure (Term Frequency – Inverse Document Frequency) that shows the relative significance of the terms for a particular document compared to the term's importance for all documents in the data set (Weiss et al., 2010). The result of the preprocessing and application of the TF-IDF measure is the set of data in which one line represents a document (one comment or one sentence), while the columns represent words that appear in the whole corpus. Allocated values indicate the importance that a word has for a specific document. If the observed term appears relatively often in one document, TF-IDF measures will be higher and will indicate that the given word is characteristic for a specific document. If a large number of documents in a corpus contains the observed term, the TF-IDF measure will be lower and will indicate that the given word is not important. Hence, the values closer to one indicate greater significance, while zero indicates that the word does not appear in the analyzed document. This prepared set is an input for the construction of a classifier.

[2] A more detailed explanation of the technique is available at http://www.stat.rutgers.edu/home/mxie/rcpapers/bootstrap.pdf

[3] Available at https://wordnet.princeton.edu/

[4] https://rapidminer.com/

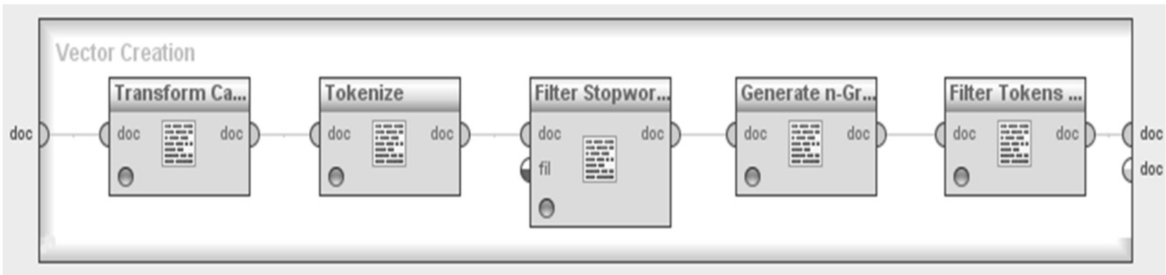

Figure 2 Comments pre-processing
Source: The authors (from RapidMiner tool)

label	text	able ↓	able_use	able_voice	ac_charger	accessable
negativno	I would have given no star if I was able.	0.408	0	0	0	0
pozitivno	"The range is very decent, I've been able to roam around my house with the ph...	0.350	0	0	0	0
pozitivno	I was able to do voice dialing in the car with no problem.	0.294	0	0.360	0	0
pozitivno	I love being able to use one headset for both by land-line and cell.	0.257	0.315	0	0	0

Figure 3 The dataset after pre-processing
Source: The authors (from RapidMiner tool)

Three representative models have been developed, using Naive Bayes, SVM and kNN binary classifiers, which identify the sentiment expressed in novel comments. Classifier performance is measured using Precision, Recall and F measures (Baeza-Yates & Ribeiro-Neto, 1999; Wiebe et al, 2005). Precision shows the relation of correctly classified entities to the majority (positive) class against the total number of entities classified in this class by the model. Recall shows which percentage of positive entities is correctly classified (as positive). Since these two measures cannot be directly compared, the F-measure is calculated as their harmonic mean.

Figure 4 gives a parallel view of the classifiers' performance when online comments from different sources are treated as individual sets. Based on the results, it can be noticed that the classification algorithms behave differently depending on data. In the case of comments on products from the Amazon site, regardless of whether it is a positive class (marked with a "+") or a negative class (marked with a "-"), the SVM classifier has the best performance. In the case of comments on IMDB movies, the kNN algorithm gives the best results in predicting sentiment orientation, while in the case of restaurant reviews from Yelp, the performance of the classifiers is very similar.

When comments are combined into a single dataset to provide a broader word base for classifier training, the SVM algorithm is superior to others, regardless of whether the performance is measured on a positive or a negative class. Namely, the model successfully identifies negative comments in 79.70% of cases, while positive comments are recognized in 75.67% of cases, as shown in Figure 5. All three classifiers are more successful when identifying comments with a negative connotation compared to positive comments, which may be the consequence of a wider commonly used vocabulary for expressing negative sentiment than a positive one.

The obtained results indicate the possibility of successful implementation of classification algorithms on online comments, but at the same time, they confirm that data analysis, although scientifically founded, requires a great deal of analytical skills (which could partially be acquired through experience) and a large number of experiments with different parameters in order to achieve the best result possible. By more thorough insight into the content structure and by comprehensive analysis of classification errors, a more detailed insight into the possibilities of improving the performance of the classifier can be obtained.

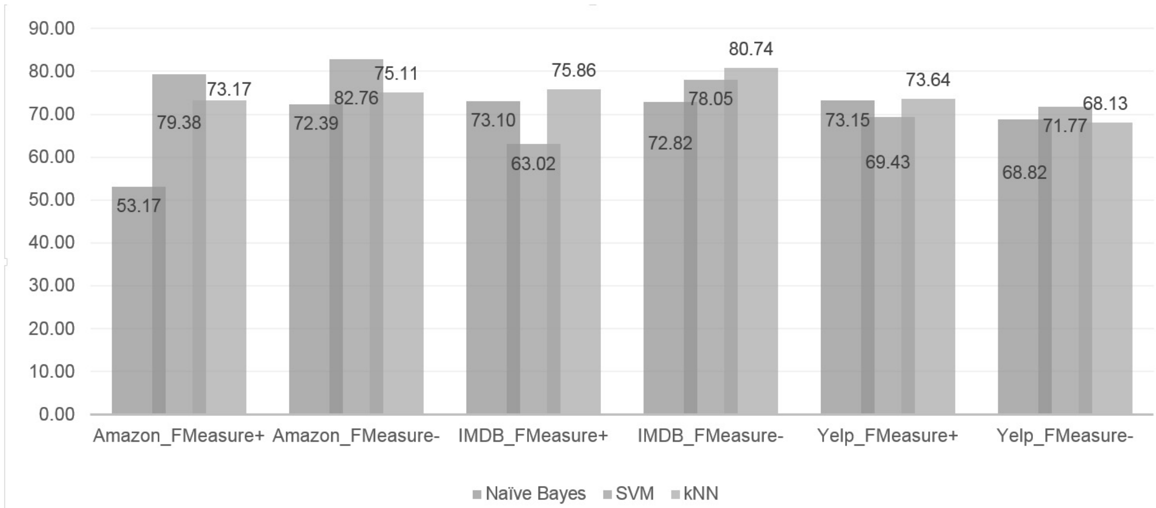

Figure 4 Parallel view of the classification results on individual sets
Source: The authors

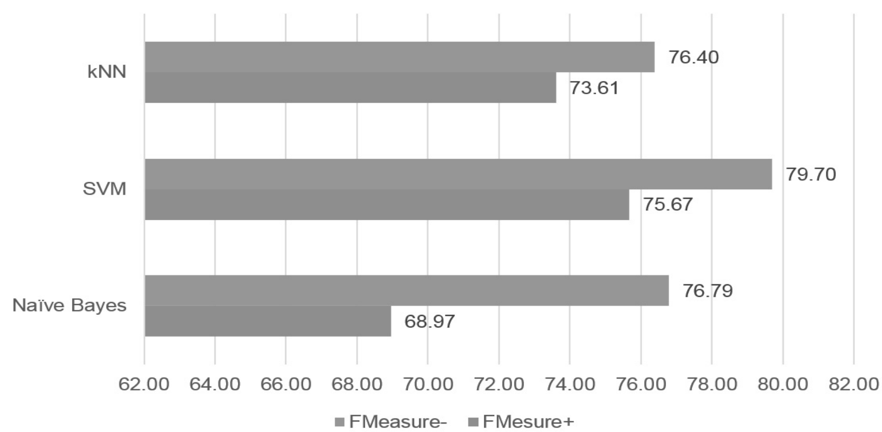

Figure 5 The result of the classification of a comprehensive corpus
Source: The authors

The successfully classified content obtained after the utilization of the developed classifier can be used for:

1. Identifying global customer (dis)satisfaction by summarizing positive/negative online comments;
2. Comparison of the online reputation of a company, brand or product with the competition;
3. Analysis of positive/negative comments on product aspects in order to identify those characteristics that consumers prefer. For this purpose, additional modeling of the results is necessary to identify the prevailing topics within the positive and negative comments;
4. Monitoring the sentiment over time, with the aim of identifying variations in customers' (dis)satisfaction.

Conclusion

Social media sites and sites with online products/services reviews have a great impact on customers' attitudes and actions: they increase customers' confidence in the company, directly affect which company customers choose among competitors and influence the process of attracting new customers. As the content posted by users contain feedback on products/services or the company itself in the form of expressed opinions and attitudes, their adequate analysis, and primarily the analysis of the emotions hidden in them, can give companies critical information to improve their business. Sentiment analysis allows companies to analyze unstructured content from social media sites, such as expressions of the prevailing opinion, attitudes and emotions directed at a particular entity (e.g. a specific product or a product characteristic). This unstructured data expresses or points to a certain sentiment (usually positive, negative and neutral, as well as all variations and gradations of the sentiment). However, the opinions expressed in this data are very subjective. For this reason, it is necessary to analyze the set of opinions of a large number of people instead of a single opinion expressed as a subjective view of an individual. Considering the number of data sources and the amount of available data, it is impossible to manually process and identify a general pattern or causes of customers' (dis)satisfaction. Therefore, automated approaches and procedures from machine learning domain are used, especially sentiment analysis or opinion mining.

The paper firstly describes the process of sentiment analysis on three groups of tasks and the specific challenges that each task tackles. It was pointed out that the data resource has to be adequately prepared, which is usually accomplished by adding metadata to a set, that is, annotating the texts according to polarity, the goal of the sentiment – aspect, but also by attaching other semantic, syntactic or lexical information to the source data. Annotations have to be accurate and relevant to the task in order to achieve effective training by the data mining algorithm, so adequate annotation is critical for the sentiment analysis. It is pointed out that text classification (to positive, negative or neutral polarity of the expressed opinion in the comments) could be conducted at different levels of analysis (at the level of the document, sentence, word or phrase). The paper particularly highlights the importance of properly selected and robust supervised and unsupervised methods. It also underlines the specific difficulties in analysis that arise from the potential existence of negation with varying range of influence, irony that is hard to detect and implicitly expressed sentiment in objective sentences. It is also pointed out that the implementation of sentiment analysis could be even more complex because it requires combining with other tasks (summarizing opinions, finding opinions, ranking products according to some expressed opinion, etc.) and methods from the specific domain of interest.

An illustrative example of sentiment analysis over three different sources of data (Amazon, IMDB and Yelp sites) with three different classifiers (Naive Bayes, SVM and kNN) showed how significant the influence of analysts' choice among diversified input parameters could be on the performance of the built classification model. More precisely, it has been shown that classification algorithms perform differently depending on the specific data, and also that the selection of the classifier directly affects the results achieved. In the case of comments on Amazon's products, the SVM classifier had the best performance. In the case of comments on IMDB movies, the kNN classifier gave the best results. In anticipation of the sentiment orientation of restaurant reviews from the Yelp site, the performance levels of all three classifiers was very similar. In case of comments being combined into a single set of data, the SVM classifier was superior to others. All three classifiers identified comments with negative connotations more successfully than positive comments.

Social media sites allow users a free exchange of opinions on products'/services' quality, purchasing process and buying experience. For companies this is a freely available source of data for the development and improvement of marketing activities. Honest, impartial feedback can identify the market segments for which a particular product/service is most fitting, data can point to mismatches between products offered by a company and customers' preferences and differences in capabilities of a company and those of its competitors. By introducing a customers' perspective into services and business transactions, organizations can offer the customers a product/service that is tailored according to their needs. Furthermore, companies can improve business decision-making by identifying new ideas and solutions for technological or economic issues. Considering everything mentioned, we can say that companies that successfully master the sentiment classification techniques and the sentiment analysis of their client base have a significant competitive advantage over companies that have not yet mastered intelligent technologies and still rely on classical marketing approaches. SM

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A paper must be written in text processor Microsoft Word. Paper size: A4. Margins: 3.0 cm on top and bottom, and 2.5 cm on left and right sides. As a guide, articles should be no more than 5.000 words in length. In case the paper exceeds the normal length, the Editors' consent for its publication is needed. Articles submitted for publication in Journal should include the research aim and tasks, with detailed methodology, presenting literature overview on the research object, substantiation of the achieved results and findings, conclusions and a list of references. Manuscripts should be arranged in the following order of presentation.

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- Up to ten keywords, which encapsulate the principal subjects covered by the article; and
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Tables should be centered. All tables must have captions. The title of your table should follow the table number. Tables should not be wider than the margins of the paper. Skip two lines before and after each table.

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Mathematical expressions should be numbered on the right side, while all variables and parameters must be defined.

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The references should specify the source (such as book, journal article or a web page) in sufficient detail to enable the readers to identify and consult it. The references are placed at the end of the work, with sources listed alphabetically (a) by authors' surnames or (b) by the titles of the sources (if the author is unknown). Multiple entries by the same author(s) must be sequenced chronologically, starting from the earliest, e.g.:

Ljubojević, T.K. (1998).
Ljubojević, T.K. (2000a).
Ljubojević, T.K. (2000b).
Ljubojević, T.K., & Dimitrijević, N.N. (1994).

Here is a list of the most common reference types:

A. PERIODICALS

Authors must be listed by their last names, followed by initials. Publication year must be written in parentheses, followed by a full stop. Title of the article must be in sentences case: only the first word and proper nouns in the title are capitalized. The periodical title must be in title case, followed by the volume number, which is also italicized:

Author, A. A., Author, B. B., & Author, C. C. (Year). Title of article. *Title of Periodical, volume number*(issue number), pages.

➲ **Journal article, one author, paginated by issue**

Journals paginated by issue begin with page 1 in every issue, so that the issue number is indicated in parentheses after the volume. The parentheses and issue numbers are not italicized, e.g.

Tanasijević, V. (2007). A PHP project test-driven end to end. *Management Information Systems, 5* (1), 26-35.

➲ **Journal article, one author, paginated by volume**

Journals paginated by volume begin with page 1 in issue 1, and continue page numbering in issue 2 where issue 1 ended, e.g.

Perić, O. (2006). Bridging the gap: Complex adaptive knowledge management. *Strategic Management, 14*, 654-668.

➲ **Journal article, two authors, paginated by issue**

Strakić, F., & Mirković, D. (2006). The role of the user in the software development life cycle. *Management Information Systems, 4* (2), 60-72.

➲ **Journal article, two authors, paginated by volume**

Ljubojević, K., & Dimitrijević, M. (2007). Choosing your CRM strategy. *Strategic Management, 15*, 333-349.

➲ **Journal article, three to six authors, paginated by issue**

Jovanov, N., Boškov, T., & Strakić, F. (2007). Data warehouse architecture. *Management Information Systems, 5* (2), 41-49.

➲ **Journal article, three to six authors, paginated by volume**

Boškov, T., Ljubojević, K., & Tanasijević, V. (2005). A new approach to CRM. *Strategic Management, 13*, 300-310.

➲ **Journal article, more than six authors, paginated by issue**

Ljubojević, K., Dimitrijević, M., Mirković, D., Tanasijević, V., Perić, O., Jovanov, N., et al. (2005). Putting the user at the center of software testing activity. *Management Information Systems, 3* (1), 99-106.

➲ **Journal article, more than six authors, paginated by volume**

Strakić, F., Mirković, D., Boškov, T., Ljubojević, K., Tanasijević, V., Dimitrijević, M., et al. (2003). Metadata in data warehouse. *Strategic Management, 11*, 122-132.

➲ **Magazine article**

Strakić, F. (2005, October 15). Remembering users with cookies. *IT Review*, *130*, 20-21.

➲ **Newsletter article with author**

Dimitrijević, M. (2009, September). MySql server, writing library files. *Computing News, 57,* 10-12.

➲ **Newsletter article without author**

VBScript with active server pages. (2009, September). *Computing News,57,* 21-22.

B. BOOKS, BROCHURES, BOOK CHAPTERS, ENCYCLOPEDIA ENTRIES, AND BOOK REVIEWS

Basic format for books

Author, A. A. (Year of publication). *Title of work: Capital letter also for subtitle*. Location: Publisher.

Note: "Location" always refers to the town/city, but you should also include the state/country if the town/city could be mistaken for one in another country.

➲ **Book, one author**

Ljubojević, K. (2005). *Prototyping the interface design*. Subotica: Faculty of Economics.

➲ **Book, one author, new edition**

Dimitrijević, M. (2007). *Customer relationship management* (6th ed.). Subotica: Faculty of Economics.

➲ **Book, two authors**

Ljubojević, K., Dimitrijević, M. (2007). *The enterprise knowledge portal and its architecture*. Subotica: Faculty of Economics.

➲ **Book, three to six authors**

Ljubojević, K., Dimitrijević, M., Mirković, D., Tanasijević, V., & Perić, O. (2006). *Importance of software testing*. Subotica: Faculty of Economics.

➲ **Book, more than six authors**

Mirković, D., Tanasijević, V., Perić, O., Jovanov, N., Boškov, T., Strakić, F., et al. (2007). *Supply chain management*. Subotica: Faculty of Economics.

➲ **Book, no author or editor**

Web user interface (10th ed.). (2003). Subotica: Faculty of Economics.

➲ **Group, corporate, or government author**

Statistical office of the Republic of Serbia. (1978). *Statistical abstract of the Republic of Serbia*. Belgrade: Ministry of community and social services.

➲ **Edited book**

Dimitrijević, M., & Tanasijević, V. (Eds.). (2004). *Data warehouse architecture*. Subotica: Faculty of Economics.

➲ **Chapter in an edited book**

Boškov, T., & Strakić. F. (2008). Bridging the gap: Complex adaptive knowledge management. In T. Boškov & V. Tanasijević (Eds.), *The enterprise knowledge portal and its architecture* (pp. 55-89). Subotica: Faculty of Economics.

➲ **Encyclopedia entry**

Mirković, D. (2006). History and the world of mathematicians. In *The new mathematics encyclopedia* (Vol. 56, pp. 23-45). Subotica: Faculty of Economics.

C. UNPUBLISHED WORKS

➲ **Paper presented at a meeting or a conference**

Ljubojević, K., Tanasijević, V., Dimitrijević, M. (2003). *Designing a web form without tables*. Paper presented at the annual meeting of the Serbian computer alliance, Beograd.

➲ **Paper or manuscript**

Boškov, T., Strakić, F., Ljubojević, K., Dimitrijević, M., & Perić, O. (2007. May). *First steps in visual basic for applications*. Unpublished paper, Faculty of Economics Subotica, Subotica.

➲ **Doctoral dissertation**

Strakić, F. (2000). *Managing network services: Managing DNS servers*. Unpublished doctoral dissertation, Faculty of Economics Subotica, Subotica.

➲ **Master's thesis**

Dimitrijević, M. (2003). *Structural modeling: Class and object diagrams*. Unpublished master's thesis, Faculty of Economics Subotica, Subotica.

D. ELECTRONIC MEDIA

The same guidelines apply for online articles as for printed articles. All the information that the online host makes available must be listed, including an issue number in parentheses:

Author, A. A., & Author, B. B. (Publication date). Title of article. *Title of Online Periodical, volume number*(issue number if available). Retrieved from http://www.anyaddress.com/full/url/

➲ **Article in an internet-only journal**

Tanasijević, V. (2003, March). Putting the user at the center of software testing activity. *Strategic Management*, *8* (4). Retrieved October 7, 2004, from www.ef.uns.ac.rs/sm2003

➲ **Document from an organization**

Faculty of Economics. (2008, March 5). *A new approach to CRM*. Retrieved July 25, 2008, from http://www.ef.uns.ac.rs/papers/acrm.html

➲ **Article from an online periodical with DOI assigned**

Jovanov, N., & Boškov, T. A PHP project test-driven end to end. *Management Information Systems*, 2 (2), 45-54. doi: 10.1108/06070565717821898.

➲ **Article from an online periodical without DOI assigned**

Online journal articles without a DOI require a URL.

Author, A. A., & Author, B. B. (Publication date). Title of article. *Title of Journal, volume number*. Retrieved from http://www.anyaddress.com/full/url/

Jovanov, N., & Boškov, T. A PHP project test-driven end to end. *Management Information Systems*, 2 (2), 45-54. Retrieved from http://www.ef.uns.ac.rs/mis/TestDriven.html.

REFERENCE QUOTATIONS IN THE TEXT

➲ **Quotations**

If a work is directly quoted from, then the author, year of publication and the page reference (preceded by "p.") must be included. The quotation is introduced with an introductory phrase including the author's last name followed by publication date in parentheses.

According to Mirković (2001), "The use of data warehouses may be limited, especially if they contain confidential data" (p. 201).

> Mirković (2001), found that “the use of data warehouses may be limited” (p. 201). What unexpected impact does this have on the range of availability?

If the author is not named in the introductory phrase, the author's last name, publication year, and the page number in parentheses must be placed at the end of the quotation, e.g.

> He stated, “The use of data warehouses may be limited,” but he did not fully explain the possible impact (Mirković, 2001, p. 201).

➲ **Summary or paraphrase**

> According to Mirković (1991), limitations on the use of databases can be external and software-based, or temporary and even discretion-based. (p.201)
>
> Limitations on the use of databases can be external and software-based, or temporary and even discretion-based (Mirković, 1991, p. 201).

➲ **One author**

> Boškov (2005) compared the access range…
>
> In an early study of access range (Boškov, 2005), it was found...

➲ When there are **two authors**, both names are always cited:

> Another study (Mirković & Boškov, 2006) concluded that…

➲ If there are **three to five authors**, all authors must be cited the first time. For subsequent references, the first author’s name will cited, followed by “et al.”.

> (Jovanov, Boškov, Perić, Boškov, & Strakić, 2004).

In subsequent citations, only the first author’s name is used, followed by “et al.” in the introductory phrase or in parentheses:

> According to Jovanov et al. (2004), further occurences of the phenomenon tend to receive a much wider media coverage.
>
> Further occurences of the phenomenon tend to receive a much wider media coverage (Jovanov et al., 2004).

In “et al.", “et” is not followed by a full stop.

➲ **Six or more authors**

The first author’s last name followed by "et al." is used in the introductory phrase or in parentheses:

> Yossarian et al. (2004) argued that…
>
> … not relevant (Yossarian et al., 2001).

➲ **Unknown author**

If the work does not have an author, the source is cited by its title in the introductory phrase, or the first 1-2 words are placed in the parentheses. Book and report titles must be italicized or underlined, while titles of articles and chapters are placed in quotation marks:

> A similar survey was conducted on a number of organizations employing database managers ("Limiting database access", 2005).

If work (such as a newspaper editorial) has no author, the first few words of the title are cited, followed by the year:

> ("The Objectives of Access Delegation," 2007)

Note: In the rare cases when the word "Anonymous" is used for the author, it is treated as the author's name (Anonymous, 2008). The name Anonymous must then be used as the author in the reference list.

➲ **Organization as an Author**

If the author is an organization or a government agency, the organization must be mentioned in the introductory phrase or in the parenthetical citation the first time the source is cited:

> According to the Statistical Office of the Republic of Serbia (1978), …

Also, the full name of corporate authors must be listed in the first reference, with an abbreviation in brackets. The abbreviated name will then be used for subsequent references:

> The overview is limited to towns with 10,000 inhabitants and up (Statistical Office of the Republic of Serbia [SORS], 1978).
>
> The list does not include schools that were listed as closed down in the previous statistical overview (SORS, 1978).

➲ When citing **more than one reference from the same author**:

> (Bezjak, 1999, 2002)

➲ When several **used works by the same author were published in the same year**, they must be cited adding a, b, c, and so on, to the publication date:

> (Griffith, 2002a, 2002b, 2004)

➲ **Two or more works in the same parentheses**

When two or more works are cited parenthetically, they must be cited in the same order as they appear in the reference list, separated by a semicolon.

> (Bezjak, 1999; Griffith, 2004)

➲ **Two or more works by the same author in the same year**

If two or more sources used in the submission were published by the same author in the same year, the entries in the reference list must be ordered using lower-case letters (a, b, c…) with the year. Lower-case letters will also be used with the year in the in-text citation as well:

> Survey results published in Theissen (2004a) show that…

➲ To **credit an author for discovering a work**, when you have not read the original:

Bergson's research (as cited in Mirković & Boškov, 2006)…

Here, Mirković & Boškov (2006) will appear in the reference list, while Bergson will not.

➲ When **citing more than one author**, the authors must be listed alphabetically:

(Britten, 2001; Sturlasson, 2002; Wasserwandt, 1997)

➲ When there is **no publication date**:

(Hessenberg, n.d.)

➲ **Page numbers must always be given for quotations**:

(Mirković & Boškov, 2006, p.12)

Mirković & Boškov (2006, p. 12) propose the approach by which "the initial viewpoint…

➲ **Referring to a specific part of a work**:

(Theissen, 2004a, chap. 3)

(Keaton, 1997, pp. 85-94)

➲ **Personal communications, including interviews, letters, memos, e-mails, and telephone conversations**, are cited as below. (These are *not* included in the reference list.)

(K. Ljubojević, personal communication, May 5, 2008).

FOOTNOTES AND ENDNOTES

A few footnotes may be necessary when elaborating on an issue raised in the text, adding something that is in indirect connection, or providing supplementary technical information. Footnotes and endnotes are numbered with superscript Arabic numerals at the end of the sentence, like this.[1] Endnotes begin on a separate page, after the end of the text. However, Strategic Management journal **does not recommend the use of footnotes or endnotes.**

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