

IDENTIFICATION OF SUITABLE PARAMETERS OF RESEARCH IN THE CZECH E-COMMERCE ENVIRONMENT

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Abstract: *The aim of this paper is to formulate recommendations for successful conduction of a questionnaire survey in field of the Czech e-commerce based on in-depth interviews performed with representatives of ten companies. The paper concludes that a questionnaire survey with estimated response rate of 15-30 % is feasible under certain conditions and outlines a specific procedure of how to achieve that. The key of successful conduction of a survey was identified to be winning the trust of respondents (e.g. auspices of a professional association in the field) and appropriate way of addressing respondents (via the professional network LinkedIn, email and phone). Due to unpopularity of questionnaires, personal interviews seem to lead to a higher response rate. Offering the final results of intended research can be an appropriate motivational element for respondents. Based on the previous research, the paper also identifies optimal time of invitation of respondents for participation in a survey (between 16:01 and 20:00 on Fridays). Appropriate formulation of questions and answer options is also important, as well as anonymousness of gathered data.*

Keywords: *E-commerce, Strategic management, Qualitative research, Grounded theory.*

JEL Classification: *M19, B49.*

1 Introduction

This paper deals with a qualitative research conducted in order to fulfill aims and goals of a dissertation of the first author of the paper. The topic of the dissertation is Strategic management in dynamic environment of the Czech e-commerce. The term “Czech e-commerce” represents Czech-based companies achieving majority of sales using instruments of electronic communication in the territory of the Czech Republic. There are approximately 37,000 companies⁵ on the Czech e-commerce market. These companies are virtually impossible to reach in a systematic way. There is no common database. In the Czech Republic, however, there is a branch association called Association for Electronic Commerce (hereinafter “APEK”) associating more than 340 companies with a total market share of 65–70 %.⁶

Companies in the field of e-commerce differ from other companies by a specific character of the environment in terms of its development dynamics. There is no particular specification of the term “dynamic environment”, but most authors using this term are referring to the field of technological companies and especially to companies operating in the field of e-commerce (e.g. [16, 19, 12, 10]). The dynamics of development of the environment manifests especially in high intensity of rivalry. Companies (respondents) are mistrustful and uncommunicative. These aspects make the field of the Czech e-commerce specific in terms of research of any kind.

⁵ Qualified estimation by APEK.

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2 Statement of a problem

Lack of general knowledge and recommendations regarding a research in the environment of e-commerce was the reason for conducting a survey that would yield information serving as a basis for formulation of recommendations for further research in this environment.

In general, there are two basic methods of conducting a survey in order to obtain primary data. These methods differ based on the role of the researcher [32], who is either present (personal interviewing) or distant (questionnaire survey).

The forms of surveys have changed in connection with a massive spread of the internet. In the past, surveys were conducted mainly via a post mail [25] but also using the PAPI (pen and paper interview) and the CATI (computer aided telephone interviews) forms. Nowadays, the most commonly used method is the CAWI (computer aided web interviews) [2].

New electronic instruments of communication among researchers and respondents have also raised the question of the form of questionnaires. Electronic instruments offer wider range of survey modes including email, online tools (web-based), SMS-based and even mobile-app-based surveys [1].

Dommeyer and Moriarty [5] claim that web-based questionnaires (they call them *embedded*) have almost five times higher response rate than questionnaires attached to an email.

According to Keusch [15], the rising popularity of online surveys in marketing research precipitates a flood of email invitations requesting participation from potential respondents. As a result, response rates are diminishing.

Design of questionnaire surveys is also important. Puleston [24] claims that the most common reason cited by respondents for no longer taking surveys is that they find them boring.

3 Methods

The aim of this paper is to validate feasibility of a survey and formulate recommendations for successful conduction of both questionnaire surveys and in-depth interviews. Objectives of the research are:

1. To validate feasibility of a successful survey on a limited sample of respondents from the specific environment of the Czech e-commerce.
2. To identify the best way of conducting both, in-depth interviews and questionnaire surveys.

Research questions related to these objectives are:

1. Is a survey in field of the Czech e-commerce feasible considering its specifics? And if so, under what circumstances?
2. How to win the trust of respondents, who are inherently distrustful and uncommunicative?
3. What are the motivators increasing willingness to participate in a survey?

The research was conducted using qualitative endogenous research method - personal interviewing. The technique of the research was in-depth, semi-structured interviews, in which the interviewer led the conversation partly according to a script and added other questions when appropriate or necessary [17]. Cognitive Aspects of Survey Methodology (CASM), as characterized by Schwarz [28] or Vinopal [31], were also taken into consideration.

Respondents were selected through a purposeful, deliberate choice, meeting certain predefined criteria – in this case being members of the branch organization APEK. Thus, according to Miovský [18], it was an incomplete, unrepresentative, non-probabilistic survey, in which the method of purposeful selection is the most common method used in the application of a qualitative research. Respondents represented both owners and top managers responsible for strategic management in their companies. The number of interviewed companies was derived based on the extent to which the research succeeded in fulfilling defined objectives. Respondents were contacted via email, LinkedIn and phone (cold calling). The research was conducted in locations that were determined by respondents. It was the company headquarters in all cases.

Scenario of the in-depth interviews was designed in such a manner that the total time of one interview ranged from 30 to 45 minutes. During the interviews there were acquired voice recordings. Recording audio tracks was done using a software tool called Voice Recording through a phone LG G2. For transcriptions of the audio tracks there was utilized a software called Transcribe. Transcriptions were reduced using the first order reduction method as defined by Miovský [18], omitting those parts of interviews that were unrelated to the subject of the research, so that they do not disclose certain identifiable, explicit information, or could lead to the identification of particular respondents.

Subsequently, evaluation of transcriptions was performed based on the Grounded Theory [29]. Transcriptions were analyzed by means of open coding, during which the data was divided into certain segments forming logical units (meaning units), which were variously comprehensive. Under the open coding these semantic units are marked by terms (codes) that already contain a certain level of conceptualization, therefore apt capturing of the essence of the marked phenomenon [7].

Transcriptions were dismembered on parts of meaning and terms were subsequently grouped in categories. Categories were further developed by seeking their properties that were placed on dimensional scales [7]. Dimensions are based on categories. They are always individually formulated with regards to the character of categories in order to create a complementary semantic unit. Creation and specification of categories (and their dimensions) helps the subsequent abstraction within the emerging theory [9].

4 Problem solving

Results of the research outlined the optimal way of conducting a questionnaire survey and also yielded knowledge regarding conduction of a qualitative research through personal interviewing. The “acceptance rate” (acceptance of invitation by respondents) was 33 %.

4.1 Preferred form of a research in general

Questionnaire surveys in general are not popular among respondents. Their attitude to questionnaires is indifferent at best; they do not care about them. In most cases, the attitude of respondents is even negative. The main reason is the lack of motivation of respondents to participate in a survey. They do not see an added value for themselves.

Filling out a questionnaire does not represent effectively spent time because most researchers fail in explanation of the reason for which the survey is conducted; participation does not make any sense for respondents.

Tab. 1: Preferred form of a research in general

	Terms	Preference
1.	Preference of an interview over a questionnaire survey	Interview
2.	An interview is more pleasant than a questionnaire survey	Interview
3.	Aversion to filling-in questionnaires	Interview
4.	An interview brings spontaneous answers	Interview
5.	A questionnaire survey brings thought-out answers	Interview
6.	Scales in a questionnaire survey force respondents to think and thus are difficult for them	Interview
7.	Answers in the form of scales are influenced by respondents' ability not to see the world in black and white	Interview

Source: Survey results

Other reasons are rather practical. Respondents are of the opinion that a questionnaire survey is more difficult than an interview because it requires a greater effort on their part. Scales in answers force them to think more precisely whilst during an interview they can let ideas flow freely. They feel their answers in a questionnaire are schematic and inaccurate due to preset scales. Answers are also influenced by personal characteristics in the sense that respondents prone to a black and white vision of the world, tend to choose extreme options, while the others in the same situation choose an answer closer to the center of the scale. Some respondents are aware that this leads to a certain distortion of results, which in their eyes also questions the meaningfulness of filling out questionnaires in general.

So, even though the personal interviewing is more demanding for respondents in terms of its duration and scheduling the interview, it is preferred over a questionnaire survey.

4.2 Impact on gaining trust of respondents

The research was conducted under the auspices of the APEK, which virtually all respondents (who were members of this association) reported as critical, the most important aspect for winning their agreement to participate. Appropriate way of addressing respondents and description of the purpose of the research is also critical. Appropriate way of addressing does not only mean a formulation of words, but also a form of invitation. Distribution of questionnaire surveys via e-mail is perceived as strongly negative; it is too impersonal which together with an unknown person of the sender reduces their willingness to participate in the survey to zero.

Tab. 2: Impact on gaining trust of respondents

	Terms	Impact
1.	A questionnaire should not go into details, it would discourage respondents	Medium
2.	A questionnaire should not check information that may be embarrassing or secret	Medium
3.	Anonymity of a questionnaire	Medium
4.	Auspices of the research by the branch organization APEK	Strongly positive
5.	Suitable way of addressing respondents, description of the purpose of the survey	Positive
6.	Selecting the appropriate communication channel for reaching respondents	Positive
7.	Unknown researcher and a mass distribution of questionnaires (via email)	Strongly negative

Source: Survey results

On the contrary, invitation via professional network LinkedIn was rated very positively; respondents had the possibility of immediate verification of identity of the researcher. Their willingness to participate in the survey also increased by phone contacting, which has, by its nature, higher urgency than an email communication. Contacting respondents via telephone underlined the importance of individual respondents (direct invitation), and from the psychological point of view it was more difficult for respondents to refuse the researcher.

In terms of gaining the trust of respondents in the context of the presented questionnaire, it was positively perceived that questions do not go into details, which would discourage respondents. Questions in the questionnaire are directed towards the strategic management level, which is not perceived as too sensitive by respondents. There is no question in the questionnaire that would be identified as unpleasant or otherwise discouraging respondents from filling out the questionnaire. Despite the fact that questions do not go into details, anonymity of the questionnaire was positively perceived by respondents.

4.3 Motivation of respondents to participate in a survey

With regard to the fact that respondents are business owners or top managers, a material motivation for participation in the survey is virtually impossible. This applies to any type of research; a questionnaire survey conducted via electronic instruments is also limited in the way of its distribution, which does not allow the transfer of small gifts etc. Most respondents stated that there is generally nothing that could motivate them to fill out a questionnaire, because they see no added value for themselves in it. Most respondents, however, admit that offering results may represent a good motivation, specifically in connection with the final results of the dissertation for which the research will be conducted. That could be the missing added value. Some respondents are motivated by the possibility of contribution to the “collective knowledge” within the association (APEK), which respondents are members of.

Tab. 3: Motivation of respondents to participate in a survey

	Terms	Influence on motivation
1.	There is a problem in motivation of respondents	Low
2.	The difficulty of a material motivation grows with respondents' social status	Low
3.	Respondents do not see an added value for themselves in filling out questionnaires	None
4.	Respondents are receiving questionnaires too often	None
5.	A possibility of contributing to the "collective knowledge" within the association, which respondents are members of	Medium
6.	The importance of a cover letter	Higher
7.	Appropriately formulated questions and answers (reasonable scaling of responses)	Medium
8.	Reluctance to be another in a series of respondents	None
9.	Good motivation in the form of results of the dissertation (a new methodology of strategic management)	Higher
10.	Interest in results of a survey to compare with other companies	Medium
11.	Good motivation is in the form of something that can potentially "push forward" respondents	Higher

Source: Survey results

For the primary decision whether to start filling out a questionnaire, an invitation letter explaining the meaning of the research is important according to respondents. They receive too many requests to participate in questionnaire surveys. It is necessary for a researcher to stand out.

In terms of retention of respondents (i.e. minimization of incompletely filled-in questionnaires) an appropriate formulation of questions and answers is important. Questions should be clearly formulated and scales of answers should be constructed in a way that does not force respondents to deeper analyzing. A scale of ten values was presented as an example of unpleasant scaling. It is hard to identify an apt answer on such a wide scale, which is discouraging for accurately thinking respondents. Rather than choosing an inaccurate answer, they will not fill out the questionnaire at all, or they will not finish it. A scale of five values was identified as optimal by respondents.

5 Discussion

Based on the analysis of transcriptions of conducted interviews there were found answers that are presented in the context of the original questions and discussed with results of other studies:

Is a survey in field of the Czech e-commerce feasible considering its specifics, and if so, under what circumstances?

A survey in field of the Czech e-commerce is feasible under certain conditions. A questionnaire survey is problematic to a certain extent, but not to a greater extent than in any other environment. Even though a personal interviewing is more demanding for respondents in terms of its duration and scheduling the interview, it is preferred over a questionnaire survey. It should be pointed out that this conclusion may be limited by the fact that it is based on opinions of respondents who agreed with the interview. The key role

in successful conduction of a survey in the environment of the Czech e-commerce plays winning the trust of respondents.

How to win trust of respondents, who are inherently mistrustful and uncommunicative (legal protection of information, data anonymization etc.)?

For gaining the trust of respondents, the auspices of the APEK is essential. This conclusion is in accordance with results of a survey conducted by Parkinson et al. [22], who claim that using a known and trusted network of professionals to endorse a survey significantly enhances response rates. However, it must be emphasized that the APEK is a private organization serving its own interests and interests of its members. A researcher with the intention of conducting a survey in the field of the Czech e-commerce should contact the APEK, explain his/her motivation as well as aims and goals of intended survey and try to find a common interest in its results. If the results are potentially interesting for the APEK, it will likely patronize the survey. Of course, it assumes willingness of the researcher to share the results in the first place.

Appropriate way of approaching respondents is also important; it should be direct and personalized, not through a mass distribution list. The best way of addressing seems to be via the professional network LinkedIn, as well as personal email to particular respondents. If low response rates are expected or if – like in the case of the Czech e-commerce – the basic sample of respondents is limited, personalization may be an important strategy to apply [26]. This conclusion is also supported with the results of a study on parameters that can influence responses to web-based surveys conducted by Sánchez-Fernández et al. [27].

Inviting respondents via email should be complemented with an invitation letter (text within the email) explaining the meaning of the research. In some cases, the choice of invitation format can have a significant impact on the response rate [30]. The invitation letter should contain a plea for help. Petrovčič et al. [23] proved the hypothesis that a plea for help is an effective response inducing element in email invitations. This conclusion is in accordance with results of a survey conducted by Felix et al. [6] who claim that the use of a “pleading” tone to email invitations may increase response to a web-based survey.

In order to maximize the response rate of a questionnaire survey, it is appropriate to complement the invitation for participation with a phone call. According to Jolson [14], this pre-notification may lead to a significant increase of the response rate, which may exceed 50 %. Even though Jolson’s conclusions are based on a research regarding questionnaire surveys conducted via a post mail, there is no apparent reason why it should not be applicable for surveys nowadays.

Another important aspect influencing response rate represents an appropriate timing. Paraschiv [21] identified a time interval from 16:01 to 20:00 as the most proper for inviting respondents to participate in an online survey with 24.4 % of total number of clicks. Between 12:01 and 16:00, there were 23.7 % of respondents who clicked to access the survey. On the other hand, the time interval with the least invitation accesses was between 4:01 and 8:00, where there were only 3.4 % of clicks. From the day of the week point of view, it was noticed that respondents are most probable to accept the email invitation on Fridays – there were 24.5 % of respondents who entered the survey on Fridays. The next two week days, from the response rate point of view, are Thursdays and Saturdays with 15.3 % resp. 15.2 % of clicks.

Not only the initial motivation but also retaining respondents during a questionnaire survey is critical. Questions should be clearly formulated and scales of answers should be constructed in a way that does not force respondents to deeper analysis. According to a research conducted by Dillman et al. [4], shorter and respondent-friendly forms increase completion rate by about 11.9 %. A scale of five values (either a semantic differential or a Likert scale) was identified as optimum. Order and overall system of questions also impacts the completion rate. Hansen et al. [8] tested how a two-staged question (first question is at the beginning of a questionnaire and refers to additional question on the same matter at the end of the questionnaire), which is, at the same time, supposedly highly interesting to respondents, impacts a survey completion. According to their conclusions, it produces an 8% higher survey completion rate.

A survey length also influences respondents' willingness to participate in a future survey. Respondents who took longer surveys were more likely to accept an invitation to participate in a future survey [13]. However, longer surveys may cause reduction of the completion rate, so it should be well-balanced.

Data anonymization is perceived as a plus. So, if possible, it is advisable to anonymize intended survey, and also declare its anonymity. This conclusion slightly differs from result of a research conducted by Murdoch et al. [20] on general population. According to their conclusion, greater privacy and larger incentives do not necessarily result in higher disclosure rates of sensitive information than lesser privacy and lower incentives. As to in-depth interviews, a non-disclosure agreement should be offered to respondents in case of intention to gain potentially sensitive information.

A rational expectation of achievable response rate of a questionnaire survey, based on acquired information and experience from conducted survey, could range between 15-30 % in case of following all recommended procedures.

What are motivators increasing willingness of participation in a survey?

Promise of providing respondents with results turned out to be one of the few effective motivational elements. It depends on objectives of particular survey (researcher may be looking for information that is potentially not interesting for respondents) and related sample of respondents.

Cottrell et al. [3] conducted a research on maximizing the response rate from general population to questionnaire surveys, testing an assumption that reducing the length of a questionnaire and offering an incentive may lead to higher response rate. They made two versions of the same questionnaire (standard and abbreviated) and tested it on four groups containing 200 respondents each (standard version, abbreviated version, without an incentive and with an incentive in form of a prize draw entry for a £100 voucher). There were no significant differences in response rates between the four groups ($p = 0.447$). In contrast to this conclusion, Sahlqvist et al. [26] found that shortening a relatively lengthy questionnaire significantly increased the response rate.

Conclusion

Results of the research outlined the optimal way of conduction of a survey (both a questionnaire survey and a qualitative research through personal interviewing) in the specific environment of the Czech e-commerce. Key motivators for participation in a survey were identified along with specific procedures of approaching respondents using new instruments of addressing respondents.

A survey in field of the Czech e-commerce is feasible under certain conditions. The key role in successful conduction of a survey plays winning the trust of respondents. For gaining the trust of respondents, the auspices of the APEK is essential. Addressing respondents should be direct and personalized, not through a mass distribution list. The best way of addressing seems to be via the professional network LinkedIn, as well as personal email to particular respondents. Approaching respondents via email should be complemented with an invitation letter explaining the objectives of the research. In order to maximize the response rate of a questionnaire survey, it is appropriate to complement the invitation for participation with a phone call. The most proper time for inviting respondents from general population to participate in an online survey is between 16:01 and 20:00 on Fridays. Questions should be clearly formulated and scales of answers should be constructed in a way that does not force respondents to deeper analyses. Applying a two-staged question should be considered. It is advisable to anonymize an intended survey, and to declare its anonymity. As to in-depth interviews, a non-disclosure agreement should be offered to respondents in case of intention to gain potentially sensitive information. If possible, respondents should be offered results of intended survey – level of motivation depends on potential usefulness of those results.

A rational expectation of achievable response rate of a questionnaire survey, based on acquired information and experience from conducted interviews, could range between 15-30 % in case of following all recommended procedures.

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