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The Importance of Determinants of Strategic Development in E-commerce¹

Veronika SVATOŠOVÁ – Jaroslava RAJCHLOVÁ*

Abstract

The main aim of the paper is to identify the determinants of strategic development in e-commerce and evaluate their importance on the whole process of strategic management. A research evaluating the importance of determinants is carried out using the online questionnaire survey with enterprises in e-commerce. The paper focuses on research sample consisting 188 SMEs and 21 large enterprises in e-commerce. Selected methods of statistical induction and descriptive statistics were used for verification of the research hypotheses. The research has shown that e-commerce enterprises primarily attribute a varying importance to individual determinants in the process of strategic management. The results show enterprises primarily underestimate the following determinants of strategic development in e-commerce: mission and vision, strategic situational analysis, strategic control, corporate culture, personnel management and strategy, financial management and strategy, ability to work with legislation. E-commerce enterprises do not apply a comprehensive approach in the process of strategic management in the Czech environment in e-commerce.

Keywords: determinants of strategic development, e-strategy, e-commerce, small and medium-sized enterprises, personal interviewing

JEL Classification: M00, M10, M19

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Introduction

The area of e-commerce is gaining more importance in current business environment, therefore the needs for effective e-commerce strategy along with the process of strategic management is increasing (Wang and Zhou, 2009; Lee and

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Park, 2009; Angelovska and Ivanovska, 2019; Zwass, 2003). The key elements of successful process of strategic management in e-commerce is to identify determinants of strategic development in e-commerce that influence overall process and are a prerequisite for the long-term development of e-commerce businesses. Nevertheless, only minor research deals with the crucial determinants influencing the effective process of strategic management that leads to the effective e-commerce strategy implementation. Therefore, it is important to provide a comprehensive insight to the strategic approach of e-commerce businesses and identification of strategic determinants that influence to possible strategic long-term development in e-commerce.

The principles of strategic management and the identification of determinants of strategic development are ruled by the same principles in the field of e-commerce. For the researched area, some aspects of strategic management are being refined with respect to the specifics of the virtual environment (e.g. Wang et al., 2019; Ke and Sun, 2015; Power, 2005a; Power, 2005b; Huang et al., 2020; Yenisey et al., 2005). In the same way, the possibilities and identification of determinants of strategic development in e-commerce are expanding. Research (Zhao et al., 2020; Yanes-Estévez et al., 2018; Šebestová and Nowáková, 2013) confirms that strategy is a critical key factor in the stability and potential expansion of any business in the market. However, most enterprises do not perceive strategic management as one of the main prerequisites for their own competitiveness (Duygulu et al., 2016). Several studies have shown that the level of consumer acceptance for e-commerce in SMEs is low in emerging economies compared to developed countries. Promoting e-commerce in the SME sector has become a national development policy in some countries (Ocloo et al., 2020; Eid, 2011).

This paper deals with the identification of determinants of strategic development with a focus on e-commerce and evaluation of their importance on the whole process of strategic management. The main motivation for dealing with this research in this paper is the research gap in exploring the importance of strategy and strategic approaches in e-commerce and especially the identification and importance of determinants of strategic development in e-commerce and their impact on the long-term development of businesses in e-commerce.

According to a study by the European Commission (EC, 2019), SMEs in the EU-28 represent a total of 99.8% of all enterprises. SMEs are thus one of the main components of every country's economy. In the Czech Republic, according to the Ministry of Industry and Trade (2019a), SMEs account for 99.8% of the total number of business entities, regardless of industry. Therefore, this research is emphasizing the key position of SMEs in e-commerce and therefore the partial aim is to compare importance of determinants of strategic development among SMEs with large enterprises in e-commerce.

1. Theoretical Framework

Determinants of strategic development are crucial in the effective and successful process of strategic management in e-commerce (Li, 2015; Ke and Sun, 2015; Damanpour and Damanpour, 2001; Long, 2017; Chouhan, 2017). A prerequisite for a successful e-commerce strategy is an effective process of strategic management in e-commerce (Zwass, 2003; Wada and Nevo, 2006; Forman, 2005; Doern and Fey, 2006; Power, 2005). An important aspect of an effective strategic management process, not only in e-commerce, is the identification of determinants that affect the entire process. Some sources mention external and internal determinants that affect the e-commerce process, including organizational, environmental, technological and personnel determinants (Onate, 2016; Yi, 2016; Pun, 2000; Pun, 2005).

The other resources define the importance of the determinants of online marketing and the logistics associated with it. The importance of websites and web design is also emphasized in e-commerce management (Jiang et al., 2016; Perrigot and Pénard, 2013; Raisinghani et al., 2007). Other sources emphasize that success in e-commerce depends on the implementation of the determinants of online shopping behavior, such as trust and loyalty, e-commerce safety, webdesign, logistic and payment methods offered, pricing policy, online communication, quality of products and services offered online, online references (Vicente, 2014; Rahayu and Day, 2015; Eid, 2011; Martins and Oliviera, 2009; Liu, 2008; Wang et al., 2006). These determinants relate mainly with online marketing activities rather than comprehensive strategic approach in e-commerce. However, most e-commerce businesses rely only on e-commerce related activities, such as online marketing, webdesign, social media activities.

Nowadays, the new trends in e-commerce are highlighted for the long-term development, such as personalization and personalized communication, social commerce, multi-channel retailing, good content related to the smart and user-friendly websites and e-shop (Wang et al., 2006; Yenisey et al., 2006). The other research focuses on the importance of governance and law related support that increase the trust in e-commerce (Jedrzejczak-Gas et al., 2019; Arinze, 2002). The other sources indicate the key success determinants in e-commerce under which even e-commerce SMEs and e-commerce start-ups could succeed, such as innovation capability, communication, personalization and customization including customer satisfaction (Ocloo et al., 2020; Di Fatta et al., 2018; Van Huy et al., 2012). Other related management activities in e-commerce, especially among e-commerce SMEs, are underestimated (Rahayu and Day, 2015; Eid, 2011). Only limited large businesses defined the strategy and consider it as important. E-commerce businesses prioritize online activities, offline activities are underrated

(Huang et al., 2020; Wang et al., 2006; Lumpkin et al., 2002). Nevertheless, no previous research has dealt in comprehensive approach to the importance of strategic development in the process of strategic management in e-commerce.

The principles of strategic management and identification of determinants of strategic development follow the same principles in the field of e-commerce. Some aspects of strategic management with respect to the specifics of the virtual environment are refined for the research area. Equally, the possibilities and identification of determinants of strategic development in e-commerce are being expanded. The Table 1 in Annex specifies the identified strategic development determinants for e-commerce SMEs. These determinants of strategic development are further investigated and are also the subject of the questionnaire survey.

1.1. Hypotheses Identification

The paper forces to verify the main hypothesis (MH): *Enterprises primarily focused on e-commerce do not apply a comprehensive approach in the process of strategic management in the Czech environment in e-commerce*. The main hypothesis is based on the previous research that revealed strategy and process of strategic management is among businesses deeply underestimated (Ke and Sun, 2015; Skokan et al., 2013; Šebestová and Nowáková, 2013; Villa et al., 2018). The purpose of this hypothesis verification is to explore if e-commerce enterprises also underestimate the role of strategy and strategic management in their long-term run. The main hypothesis formulation is also based on the results of previous secondary research (Wang et al., 2006; Lumpkin et al., 2002; Duygulu et al., 2016; Feindt et al., 2002; Grandon and Pearson, 2004; Grandon et al., 2011) that found out large enterprises and SMEs do not follow any comprehensive framework to develop their strategies or do not formulated strategy at all. This statement is supported the results of other research focused on e-commerce SMEs that revealed strategy and selected determinants of e-commerce are in the process of e-commerce underrated (Rahayu and Day, 2015; Eid, 2011; Ocloo et al., 2020; Di Fatta et al., 2018). Nevertheless, only minor research is dealing with the specification on formulation and implementation of strategies by enterprises size in e-commerce. This paper should fill in this research gap.

The main hypothesis (MH) formulation is supported by verification of the following partial hypotheses.

PH1: The importance of the determinants of strategic development in e-commerce is not influenced by the size of enterprises primarily oriented on e-commerce.

PH2: The importance of the determinants of strategic development in e-commerce is not influenced by the size of the assets of enterprises primarily oriented on e-commerce.

The partial hypotheses focused on the exploration of difference between large enterprises and SMEs enterprises in implementing the importance of determinants of strategic development in process of strategic management in e-commerce. These partial hypotheses (PH1, PH2) derive from the secondary research (Ocloo et al., 2020; Di Fatta et al., 2018; Van Huy et al., 2012; Rahayu and Day, 2015; Eid, 2011) focused on the differences between observed groups of enterprises in implementing strategy and strategic approaches into business processes. In most cases these research revealed differences between the selected groups of enterprises, i.e., the bigger enterprise is the higher probability in formulation and implementation of strategy (even in written form is).

PH3: All determinants of strategic development in e-commerce are considered by enterprises primarily oriented on e-commerce to be equally important, i.e., all distribution functions are equal.

The other partial hypothesis (PH3) focused on the equal importance of determinants of strategic development in the process of strategic development in e-commerce. Based on the literature review, all determinants of strategic development should be considered as equally important for effective processes in strategic management (Doern and Fey, 2006; Power, 2005; Onate, 2016; Yi, 2016). This hypothesis is also supported by results of other research in e-commerce, in which e-commerce businesses that fails in e-commerce underestimate the selected observed determinants of e-commerce (Rahayu and Day, 2015; Eid, 2011; Hutchinson, 2001; Chen et al., 2014; Choshin and Ghaffari, 2017).

PH4: There is no relationship between the determinants of strategic development in e-commerce and the economic performance of enterprises primarily oriented on e-commerce.

The last partial hypothesis (PH4) focuses on the relationship between the importance of determinants of strategic development and economic performance of enterprises in e-commerce. This hypothesis (Jia, 2016; Tu, 2016; Zhu, 2015; Li, 2017; Zhang, 2017; Wei, 2015) derives from the previous research focused on the efficiency of strategic approaches in relationship of financial health and economic results of observed enterprises. The research revealed the better economic results reached the higher probability in the effective strategy formulation and implementation is. Most of the research focused on e-commerce dealt with the financial management and financial analysis of e-commerce businesses without a connection to the strategic performance of e-commerce businesses. No previous research deals with economic performances of enterprises in e-commerce and their impact on the strategic management and strategic development of e-commerce businesses, therefore this paper aims to fill in this research gap.

2. Research Methodology

The main aim of the paper is to identify the determinants of strategic development and strategic management in e-commerce and evaluate their importance on the whole process of strategic management. The partial aim is to compare importance of determinants of strategic development among SMEs and large enterprises in e-commerce. The research survey was conducted during the second half of 2019 and is based on online questionnaire survey distributed electronically among owners and top managers of selected e-commerce enterprises. Firstly, owners and managers were addressed telephonically and then electronically. In the survey, the importance of selected determinants in the process of strategic management in e-commerce was evaluated by respondents on the scale 1 – 5 (1 – the least important, 5 – the most important). The selected methods of statistical induction (non-parametric methods such as the Kruskal-Wallis ANOVA (PH1, PH2, PH4) and the Friedman test (PH3) and descriptive statistics (arithmetic mean, median, mode, standard deviation) were used to verify the main and partial research hypotheses.

2.1. Research Sample

The research sample of enterprises was identified according to the following criteria: Enterprises belonging to the category:

- SMEs primarily focused on e-commerce (affiliated stone shops) – defined as e-shops or e-malls. Small and medium-sized enterprises are then compared to large enterprises.
- Enterprises that trade mainly through websites. Enterprises selling predominantly on the B2C market.
- Enterprises offering physical products (the most visible segment in the online market, online services not included, difficult to identify and measurable for the research file). Registered main seat in the Czech Republic (enterprises that are only domestic or with a minimum share of debts).
- Legal form of business: Joint Stock Company, Limited Liability Company.
- Existence of enterprise on the market – at least 10 years (i.e. established in 2011 and earlier), therefore there is a prerequisite all experienced enterprises use e-commerce strategy.
- Prerequisite is the trustworthiness and reliability of the enterprise (membership in Association for Electronic or certification of customer-verified award by Heuréka.cz).
- Enterprises that have at least one or more full-featured e-shop.

Based on the above-mentioned restrictive criteria, the research sample of enterprises consists of 367 enterprises that were addressed electronically. All enterprises were found in the Commercial Register.

Finally, the research sample consists of 209 enterprises, i.e. the return of the questionnaires was 56.94%. The paper focuses on research sample consisting of 188 SMEs in e-commerce in comparison with 21 large enterprises. According to Raosoft (2019) at a 95% confidence level and 5% error tolerance, a representative sample of 188 respondents is recommended. The representativeness of the research sample is therefore ensured.

Hypothesis testing (PH1, PH2, PH3, PH4) is performed at the significance level of $\alpha = 0.05$. The rejection or non-rejection of the verified hypothesis is decided by comparing the p-value, which is the minimum significance level for which the null hypothesis can be rejected and the significance level of α . The Shapiro-Wilk test confirmed that the selection did not come from a normal probability distribution at the significance level of $\alpha = 0.05$, since $p \leq \alpha$ (based on Statistica software results). Because the normality condition is not met, parametric statistical methods cannot be performed. The following non-parametric tests are selected for hypothesis testing: the Kruskal-Wallis test and the Friedman test. The verification of hypotheses is realized by the Statistica software. The hypotheses that we validate at paper are referred to as the null hypothesis (H_{0x}) and the alternative hypothesis (H_x). The limitations of non-parametric tests are as follows: the conclusions of these methods are less reliable than those of parametric methods; confidence intervals are usually larger, the set level of significance is usually observed with too much margin, tests have less power (Kubanová, 2004).

3. Results

The following Table 1 present the results divided by the size of the enterprises. In total, 31 enterprises, i.e. 14.83%, do not have a specified strategy, 47 enterprises, i.e. 22.49%, focus their strategy on quality, 41 enterprises, i.e. 27.27%, focus their strategy on stabilization and 33 enterprises, i.e. 15.79% to maximize profit. Micro enterprises focus their strategy most on quality, small enterprises focus their strategy most on stabilization and development, medium and large enterprises for development. Only 14.83% of companies do not have a specified e-commerce strategy, and most companies focus their e-commerce strategy on development, regardless of company size.

Figure 1 summarizes the importance of strategy in e-commerce evaluated by enterprises primarily oriented on e-commerce in the long-term development, broken down by enterprise size (micro, small, medium, large, large +). Altogether,

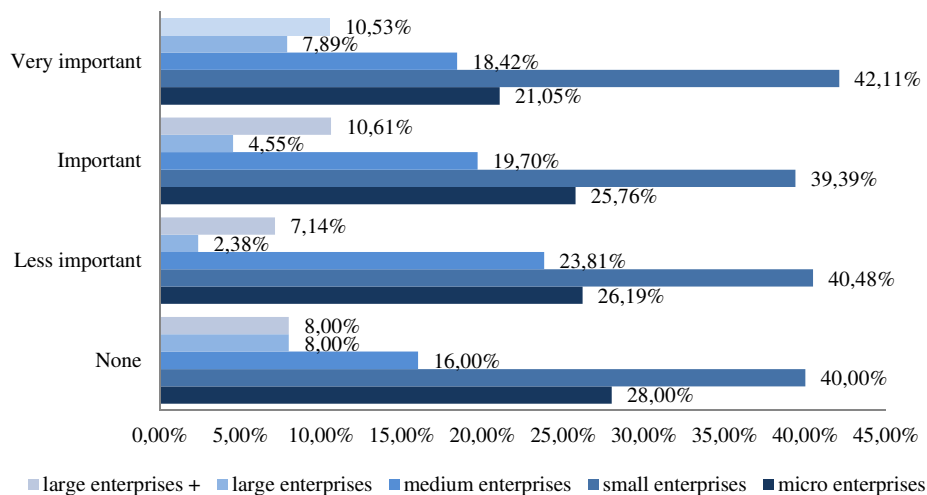
76 enterprises, i.e., 36.36%, identified the implementation of an e-commerce strategy in the long-term development as very important, 66 enterprises as significant, i.e., 31.58% of enterprises, 42 enterprises as less significant, i.e., 20.1% of enterprises, and 25 enterprises as insignificant, i.e., 11.96%. The results confirm the outcomes of the secondary surveys (Li, 2015; Ke and Sun, 2015; Damanpour and Damanpour, 2001) that only minority enterprises choose to design and implement a systematic approach to create and implement an e-commerce strategy.

Table 1
Priority Focus of Strategy in E-commerce

Priority focus of strategy in e-commerce	No specified	On quality	On stabilization	On development	On maximization of profit	In total
Micro enterprises	8	14	12	10	7	51
Small enterprises	17	16	19	19	14	85
Medium enterprises	6	6	4	15	10	41
Large enterprises	0	6	0	4	2	12
Large enterprises +	0	5	6	9	0	20
Enterprises in total	31	47	41	57	33	209
Enterprises in total (in %)	14.83%	22.49%	19.62%	27.27%	15.79%	100%

Source: Own processing.

Figure 1
Importance of Strategy in E-commerce



Source: Own processing.

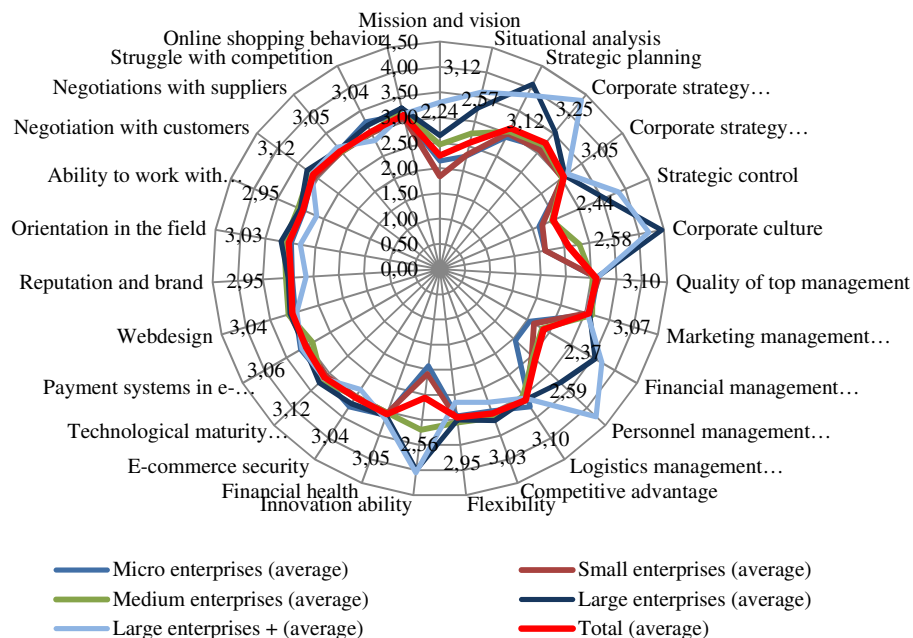
It could be understandable based on previous results of secondary research studies (Van Huy et al., 2012; Rahayu and Day, 2015; Eid, 2011) that for SMEs in e-commerce, the strategy could be considered as unimportant or less important

(almost 30% of cases). There are also interesting findings that 25% of large enterprises share the same view.

A significant part of the questionnaire survey dealt with the importance of determinants of strategic development in e-commerce for the long-term development of enterprises on the scale of 1 – 5. The following Figure 2 provides an average assessment of the importance of strategic development determinants in e-commerce broken down by enterprise size. Overall, strategic planning (3.12) and business strategy formulation (3.25) are ranked the best in the category General aspects of strategic management such as mission and vision (2.24) and strategic control (2.44) are the least important. In the category of the Internal Determinants of strategic development, on average, technological maturity (3.12) and logistics management and strategy (3.10) are best rated. On the other hand, financial management and strategy (3.37), personnel management and strategy (2.59) and corporate culture (2.58) are rated as the least significant. In the category of External determinants of strategic development, the most important evaluations are dealing with customers (3.12) and online shopping behavior (3.12), the least significant is the ability to work with legislation (2.95).

Figure 2

Average Evaluation of the Determinants of Strategic Development in E-commerce



Source: Own processing.

In summary, it can be evaluated that the larger the enterprise, the more significant it assesses the individual determinants of strategic development. The results of the research confirmed the results of the secondary research studies (Duygulu et al., 2016; Feindt et al., 2002; Hernández et al., 2009; Holátová et al., 2015; Chen et al., 2014; Choshin and Ghaffari, 2017) that in practice the process of strategic analysis, mission and vision and strategic control are mostly underestimated. The fact that personnel management and strategy and financial management and strategy are deeply underestimated among the surveyed enterprises, regardless of their size, is also interesting. Based on the survey and the financial analysis of the monitored enterprises, the area of financial and personnel management and strategy are the weakest part of their strategic management.

3.1. Verification of Hypotheses

The results of the questionnaire survey are divided according to the size of enterprises into the following categories: micro enterprises (up to 10 employees), small enterprises (up to 50 employees), medium enterprises (up to 250 employees), large enterprises (up to 500 employees), large + enterprises (over 500 employees).

Furthermore, the results of the questionnaire survey are divided according to the size of the assets of enterprises into the following categories: A: up to 10,000 thous. CZK, B: up to 50,000 thous. CZK, C: up to 100,000 thous. CZK, D: up to 200,000 thous. CZK, E: up to 300,000 thous. CZK, F: up to 500,000 thous. CZK, G: up to 1,000,000 thous. CZK, H: over 1,000,000 thous. CZK.

The partial hypotheses (PH1, PH2, PH3, PH4) are verified by the Kruskal-Wallis test. Determinants of strategic development are divided into categories: general aspects (determinants) of strategic management, internal determinants of strategic development, external determinants of strategic development, as in detail characterized in the Table 2 (Annex).

All hypotheses are verified at the significance level of $\alpha = 0.05$, for which the null hypothesis can be rejected, i.e., $p \leq \alpha$. The methods and results of hypotheses verification is given in the Table 3 (Annex). Determinants are statistically significant when $p > \alpha$.

Hypothesis PH1: Since some p-values of determinants are not statistically significant, we cannot confirm the null hypothesis (PH1) and it can be stated that *the importance of the determinants of strategic development in e-commerce is influenced by the size of enterprises primarily oriented on e-commerce.*

Multiple comparison of average order identifies the size pairs of e-commerce enterprises that caused the hypothesis to be rejected, and the largest differences are defined between them:

- *Mission and vision*: the biggest differences: micro and large +, small and large +
- *Situational analysis*: micro and large +, small and large +
- *Business strategy formulation*: micro and large +, small and large +, medium and large +
- *Strategic control*: micro and large enterprises, micro and large + enterprises, small and large enterprises, small and large + enterprises, medium and large + enterprises
- *Corporate culture*: the biggest differences: micro, medium and large, micro and large +, small and medium-sized enterprises, small and large enterprises, small and large + enterprises, medium and large enterprises, medium and large + enterprises
- *Financial management and strategy*: the biggest differences: micro and large enterprises, micro and large + enterprises, small and large enterprises, small and large + enterprises, medium and large + enterprises
- *Personnel management and strategy*: the biggest differences: micro and large enterprises, micro and large + enterprises, small and large + enterprises, medium and large + enterprises
- *Innovation ability*: the biggest differences: micro, medium and large, micro and large +, small and medium, small, large +
- *Mission and vision*: the biggest differences: E: up to 300,000 and F: up to 500,000, E: up to 300,000 and H: over 1,000,000
- *Situational analysis*: the biggest differences: A: up to 10,000 and H: over 1,000,000
- *Strategic control*: the biggest differences: A: up to 10,000 and H: over 1,000,000.

Hypothesis PH2: As some p-values of determinants are not statistically significant, we cannot confirm the null hypothesis (PH2) and therefore it can be stated that *the importance of the determinants of strategic development in e-commerce is influenced by the size of assets of enterprises primarily oriented on e-commerce*.

Multiple comparison of average order of statistical induction identifies the pairs of the size of the assets of the enterprises that caused the hypothesis to be rejected and the largest differences are defined between them:

- *Corporate culture*: the biggest differences: B: up to 50,000 and H: over 1,000,000, A: up to 10,000 and H: over 1,000,000
- *Financial management and strategy*: the biggest differences: B: up to 50,000 and F: up to 500,000, H: over 1,000,000 and B: up to 50,000, A: up to 10,000 and H: over 1,000,000, D: up to 200,000 and H: over 1,000,000

- *Personnel management and strategy*: the biggest differences: B: up to 50,000 and H: over 1,000,000, A: up to 10,000 and H: over 1,000,000, D: up to 200 000 and H: over 1,000,000
- *Innovation ability*: the biggest differences: B: up to 50,000 and H: over 1,000,000, A: up to 10,000 and H: over 1,000,000, A: up to 10,000 and F: up to 500,000.

Hypothesis PH3: This hypothesis is verified by Friedman's test at the significance level of $\alpha = 0.05$, for which the null hypothesis can be rejected, i.e., $p \leq \alpha$. Since $p = 0.00000$, therefore, the null hypothesis cannot be confirmed, therefore it can be concluded that *the determinants of strategic development in e-commerce are not considered by enterprises primarily oriented on e-commerce to be equally significant*.

Hypothesis PH4: Economic performance is assessed with the help of the main indicators of profitability, liquidity, debt and cost of capital, i.e., using WACC (Weighted Average Cost of Capital), ROA (Return of Assets), ROE (Return of Equity), current liquidity, long-term coverage calculated based on the information of financial statements of selected e-commerce enterprises. Confirmation or rejection of the hypothesis is realized at the significance level of $\alpha = 0.05$ using the Kruskal-Wallis ANOVA, for which the null hypothesis can be rejected, i.e. if $p \leq \alpha$. All p-values of economic performance indicators were evaluated as statistically significant because $p > \alpha$, therefore we do reject the hypothesis. It can therefore be stated that *there is no relationship between the importance of the determinants of strategic development in e-commerce and the economic performance of enterprises primarily oriented on e-commerce*.

The following Table 3 summarizes the main and partial hypotheses verifications. The main hypothesis is verified based on the results of partial hypotheses verification. Therefore it is also confirmed that enterprises primarily oriented on e-commerce do not apply a comprehensive approach in the process of strategic management in the Czech environment in e-commerce (MH).

4. Discussion

Based on literature review (Duygulu et al., 2016; Feindt et al., 2002; Grandon and Pearson, 2004; Grandon et al., 2011; Halici and Erhan, 2013; Hernández et al., 2009; Holátová et al., 2015; Hutchinson, 2001; Chen et al., 2014; Choshin and Ghaffari, 2017; Skokan et al., 2013; Šebestová and Nowáková, 2013; Villa et al., 2018), no coherent research sources are dealing with the importance of determinants of strategic development in e-commerce. Only minor research deals

with the selected determinants that need to be considered in the business processes in e-commerce. It was confirmed no e-commerce enterprise does apply a comprehensive approach in the process of strategic management in the Czech environment in e-commerce as they underestimate the identified determinants of strategic development in e-commerce. This statement was also confirmed in previous studies focused on the other group of businesses (Vicente, 2014; Rahayu and Day, 2015; Eid, 2011; Martins and Oliveira, 2009; Liu, 2008; Wang et al., 2006).

Most of e-commerce businesses have shortcomings in proposing and implementing the strategy in e-commerce based on underestimating the selected observed determinants (Ke and Sun, 2015; Skokan et al., 2013; Šebestová and Nowáková, 2013; Villa et al., 2018). The results provided determinants of strategic development in e-commerce are not considered by e-commerce enterprises primarily to be equally important, nevertheless based on literature review (Ocloo et al., 2020; Di Fatta et al., 2018; Van Huy et al., 2012; Rahayu and Day, 2015; Eid, 2011) all identified determinants should be considered in the process of strategic management as the same and equally important. The research did not confirm there is a relationship between determinants of strategic development and economic performance of enterprises in e-commerce. Nevertheless, the other research (Jia, 2016; Tu, 2016; Zhu, 2015; Li, 2017; Zhang, 2017; Wei, 2015) focused on financial analysis and financial management in e-commerce confirmed the importance of financial management and financial health in e-commerce success. The direct impact of importance of determinants of strategic development on the economic performance has not been indicated, therefore in total, 76 enterprises, i.e. 36.36%, marked the implementation of e-commerce strategy in long-term development as very significant, 66 enterprises as significant, i.e. 31.58% of enterprises, 42 enterprises as less significant, i.e. 20.1% of enterprises and 25 enterprises for insignificant, i.e. 11.96%.

The partial part of this research investigates the difference between SMEs and large enterprises in e-commerce. The research confirmed the differences between these observed groups, i.e., the larger enterprise is the more importance is given to the identified determinants in the process of strategic management in e-commerce. The larger enterprises are the more emphasis on strategy formulation and implementation in the process of strategic management in e-commerce is given. The previous research (Ocloo et al., 2020; Di Fatta et al., 2018; Van Huy et al., 2012; Rahayu and Day, 2015; Eid, 2011) also identified differences between SMEs and large enterprises, i.e. SMEs mainly underestimate the importance of strategy in their strategic development.

The results of the research confirmed the results of the secondary research studies (Zwass, 2003; Wada and Nevo, 2006; Forman, 2005; Doern and Fey,

2006; Power, 2005) that in practice the process of strategic analysis, mission and vision and strategic control are mostly underestimated. This result confirmed the prioritization of determinants of strategic developments in the process of strategic management in e-commerce may be the key element for the long-term development and e-strategy successful formulation and implementation.

Conclusion

No previous research comprehensively deals with the importance and identification of determinants of strategic development in e-commerce, therefore this paper was aimed to fill in this research gap. Nevertheless, this research did not confirm meaningful differences among classical offline enterprises and e-commerce enterprises in identification of determinants of strategic development and their importance in the process of strategic management, as given in these sources (Huang et al., 2020; Wang et al., 2006; Lumpkin et al., 2002). E-commerce enterprises also underestimates importance of strategy formulation and implementation as the whole process of strategic management and provides similar shortcomings, as underestimating the mission and vision, analysis or strategic control, personnel management and strategy, financial management and strategy, corporate culture, ability to work with legislation. In summary, determinants of strategic development in e-commerce are not considered as equally important and comprehensive insight in strategic management in e-commerce is missing. The research also revealed the difference between identified groups of e-commerce enterprises, i.e., the larger enterprise is the more importance is given to the identified determinants in the process of strategic management in e-commerce. In summary, the prioritization of identified determinants has no effect on economic performance in e-commerce.

Based on the findings, it is recommended for e-commerce enterprises to be focused on prioritization of each determinant of strategic development, identify the strengths and weaknesses of each determinant in their business and provide the systematic approach in strategic management process in e-commerce. It is also recommended to appoint the responsible persons for e-strategy proposal and implementation and identify the responsibility for the identified determinants of strategic development in e-commerce. The main benefit of the research is based on the systematic identification of determinants of strategic development in e-commerce and identification its importance for the long-term development of e-commerce business. The findings could be served for the managers, marketers and businesses in e-commerce that are responsible for the e-strategy proposal and implementation.

Even though the comprehensive research in e-commerce has been realized, some limitations must be highlighted. Research sample limits to the e-commerce enterprises in the Czech Republic, therefore in the different region results may vary. The other research activities could be focused on comparison of identified outcomes in different countries. Research sample also limits to stable and established e-commerce enterprises, start-up enterprises were not included as they often lack stable financial results and history being in e-commerce. The other research could be also focused solely on start-up e-commerce enterprises. The suggestions for the future research are based on realization of the similar research in other EU regions and comparison of identified results.

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Annex

Table 2

Determinants of Strategic Development for SMEs in E-commerce

Departments of strategic development	Specification of the determinants of strategic development for SMEs	Specification of determinants of strategic development for SMEs with a focus on e-commerce	Authors and sources of determinants identification
General aspects (determinants) of strategic management			
<i>Mission and vision</i>	In SMEs missions and visions are usually lacking without identifying the business concept (the most common cause of business failure).	The basis for success in formulating and implementing a strategy in e-commerce. The mission and vision of e-commerce SMEs is usually not specified.	Choshin and Ghaffari, 2017; Grandon and Pearson, 2004
<i>Situational analysis</i>	Is small and medium-sized enterprises, situation analysis is not considered as significant, their business is based on current circumstances and events affecting business; this part is often underestimated.	Situational analysis in SMEs in e-commerce is in most cases limited to online analysts, to assess the conversion rate, traffic rate and online customer behaviour. A comprehensive strategic analysis is usually lacking.	Duygulu et al., 2016; Zhao et al., 2020; Yanes-Estévez et al., 2018
<i>Strategic planning</i>	In small and medium-sized enterprises, planning is limited to the short term, long-term planning is underestimated	E-commerce SMEs elaborate plans in writing exceptionally usually limiting the plan to the short or medium term.	Feindt et al., 2002
<i>Corporate strategy formulation</i>	&in the practice of small and medium-sized enterprises, the business strategy is not formulated; the enterprise is managed and derived according to daily operational needs, based on informal relationships and without internal documentation.	The key is the formulation of a clear and unique e-commerce strategy. However, SMEs in e-commerce find it difficult to formulate such a strategy especially without a clear vision, mission sand business concept.	Skokan et al., 2013; Zhao et al., 2020; Yanes-Estévez et al., 2018
<i>Corporate strategy implementation</i>	Without a mission, vision and strategy formulation, it is difficult to realize the business concept and the main business idea.	Usually, a strategy that is simple to replicate in e-commerce is not unique. There is no clear competitive advantage; no measures are in place to correct the e-commerce strategy.	Grandon et al., 2011; Šebestová and Nowáková, 2013
<i>Strategic control</i>	Often, no measurable strategic control indicators including measurable strategic objectives are identified in SMEs.	Strategic control for SMEs in e-commerce is usually limited to evaluating web analytics; a comprehensive assessment of financial and non-financial performance is usually lacking.	Halici and Erhan, 2013

Internal factors of strategic development			
<i>Quality of top management</i>	It is based on the talents, skills, knowledge, experience and competencies of the owners and managers, which is the most important factor for possible success or failure in small and medium-sized enterprises.	Good top management is a prerequisite for quality formulation and implementation of a successful e-commerce strategy. Managers and owners typically lack experienced, managerial skills and key e-business competencies.	Gordon et al., 2011; Wang et al., 2019
<i>Marketing management and strategy</i>	A key factor in the success of a start-up enterprise, often underestimated due to a lack of knowledge and the lack of marketing management by managers, the target group of customers is usually not identified.	A key determinant of e-commerce success. SMEs in e-commerce usually restrict online marketing activities; comprehensive marketing also including offline marketing activities is usually not applied by SMEs in e-commerce.	Šebestová and Nowáková, 2013; Zhao et al., 2020; Yanes-Estévez et al., 2018
<i>Financial management and strategy</i>	Small and medium-sized enterprises face insufficient initial capital and working capital bad debts, lack of a financial management concept, seeking opportunities to raise additional capital for expansion.	The financial policy in SMEs in e-commerce is not comprehensively addressed; it is usually limited to operational processes in accounting. In e-commerce the importance of financial management for the development of SMEs in e-commerce is not emphasized.	Lumpkin et al., 2002
<i>Personnel management and strategy</i>	In the case of small and medium-sized enterprises, it is problematic to find quality employees and their loyalty, as well as to obtain sufficient working capital and create an effective motivation system, usually no HR strategy.	SMEs in e-commerce usually have limited financial resources to acquire and maintain a quality and key workforce. In SMEs, e-commerce usually lacks a systemic approach to personnel policy and the implementation of personnel policy.	Wang et al., 2006
<i>Logistics management and strategy</i>	For SMEs, it depends, in which field it is doing business. Especially, for production enterprises, the key success factor is a perfectly formulated and implemented logistics strategy, as well as for other retailers, one aspect of building the business trust.	The key element of success of any enterprise in e-commerce in the long-term. The strategy has to be connected with the system of effective storage, packing and delivering of goods from the online retailer to the online customer. The delivery time is a decisive factor of future online customer loyalty.	Holátová et al., 2015
<i>Competitive advantage</i>	A unique and competitive product / service that is distinct from competitors and that creates a clear competitive advantage is crucial for the development of SMEs.	A competitive advantage in the form of a unique product or unique services is essential in e-commerce SMEs for their long-term success in the market. Without a competitive advantage it is not possible to succeed.	Huang et al., 2020

<i>Flexibility</i>	In small and medium-sized enterprises, the decisive factor is to take advantage of a possible competitive advantage in implementing the corporate strategy together with quality management.	SMEs in e-commerce are better able to adapt to the needs of the online market and the needs of the online customer than large e-commerce companies with a wide range of products the advantage of SMEs in e-commerce is their specialization.	Jedrzejczak-Gas et al., 2019; Arinze, 2002
<i>Innovation ability</i>	In the SME, no concept of systemic change management is usually ensure, including possible scenarios for accepting expected and unexpected events and market factors.	SMEs in e-commerce usually have limited innovation capacity. The reason is the absence of targeted support for creativity and innovative thinking in the enterprise; it is not part of the corporate culture. Limited opportunities and capacities for absolute innovation in e-commerce.	Rahayu and Day, 2015; Eid, 2011
<i>Financial health</i>	An essential element for long-term market stability and the prevention of loss of competitive position, often underestimated due to a lack of creativity, capital, change management and overall laxity of management, there is usually no comprehensive approach to managing innovation in SMEs.	SMEs in e-commerce struggle with the same financial problems as SMEs in other industries In most cases, SMEs in e-commerce solve problems with short-term financing, short-term funding, cash flow problems, which usually follow the absence of financial policy.	Li, 2015; Ke and Sun, 2015
<i>E-commerce security</i>	Specifics for e-commerce. Generally, in business, it is necessary to inspire the customer's interest and trust. The priority is the seriousness of the seller.	For SMEs in e-commerce building trust and generally trust in e-commerce is a priority. If SMEs knowingly or unknowingly underestimate e-commerce security they cannot be successful in the long-term.	Hernández et al., 2009
<i>Technological maturity of e-commerce</i>	Specifics for e-commerce. In general, it is important in business to use technologies that streamline and simplify the activities of both sellers and buyers.	The basis of the long-term success of SMEs in e-commerce is the use of modern technologies that support the activity of both the online seller and online buyer (Big data, online CRM, online interactive communication, use of social media, etc.) and which create a prerequisite for the competitive position of SMEs in e-commerce.	Hutchinson, 2001
<i>Payment systems in e-commerce</i>	Specifics for e-commerce.	With the technological advancement and e-commerce security, it is important for e-commerce SMEs to securely offer forms of payment on the Internet and ensure their variability in the e-shop.	Vicente, 2014; Rahayu and Day, 2015

<i>Webdesign</i>	Specifics for e-commerce.	The key success is the quality and current webdesign of the e-shop, which will increase the conversion rate of purchase and increase the ratio of real online customers. SMEs in e-commerce usually have limited financial and staffing capacity for a high quality and efficient webdesign.	Chen et al., 2014
<i>Reputation and brand</i>	The ultimate goal of any business is to achieve a reputation in the industry and general knowledge of the brand, not just the products offered. For SMEs a strategic goal is difficult to achieve also due to the lack of experience and the lack of strategic thinking.	The ultimate strategic goal for e-commerce SMEs is to achieve a positive reputation and value for the e-commerce brand. This is a strategic goal that has been built for years and not everyone in this area can succeed.	Onate, 2016; Yi, 2016
External factors of strategic development			
<i>Orientation in the field</i>	Previous experience, contacts and knowledge of the sector could be a key factor for future expansion, and this is usually underestimated by SMEs.	It is important to have a detailed orientation in e-commerce on the domestic and foreign online market, to follow trends that should be implanted in the e-commerce itself.	Perrigot and Pénard, 2013; Raisinghani et al., 2007
<i>Ability to work with legislation</i>	Detailed orientation in the legislation could overcome any financial losses, sanctions or loss of business image.	In e-commerce, it is necessary to work and implement the e-commerce legislation. SMEs in e-commerce lack experience and have insufficient work experience with legislation in the field.	Jiang et al., 2016; Perrigot and Pénard, 2013
<i>Negotiation with customers</i>	Obviously, SMEs have a problem finding new and stable customers and a customer base that stabilizes their business without the risk of bad debts.	Personalization and immediacy is important for successful SMEs in e-commerce and interactive communication with an online customer, complemented by a built-in online customer care system.	Huang et al., 2020; Yenisey et al., 2005
<i>Negotiations with suppliers</i>	The starting point for small and medium-sized enterprises is cooperation with high-quality, stable and reputable suppliers who support the main corporate and business strategy and in the absence of experience, again the problematic area of SMEs.	The bargaining power of suppliers of products and services significantly affects the e-commerce strategy and strategic position of SMEs in e-commerce. The key for SMEs is to select reputable and quality suppliers that support the reputations and brand of SMEs in e-commerce.	Zwass, 2003; Wada and Nevo, 2006

<i>Struggle with the competition</i>	Previous experience, contacts and knowledge of the sector could be a key factor for future expansion, and this is usually underestimated by SMEs.	In e-commerce, barriers to enter the online market are practically unlimited, a huge struggle with competitions in e-commerce, obviously SMEs in e-commerce are specialized in a specific segment and do not have an attempt to struggle with the biggest online retailers.	Damanpour and Damanpour, 2001; Long, 2017
<i>Online shopping behaviour</i>	Specifies for e-commerce.	For SMEs in e-commerce, it is essential to understand the real models of online shopping behaviour of the target group of online customers. The e-commerce strategy needs to be adapted to this group. Understanding and implanting these principles in the e-commerce strategy leads to success in building customer loyalty. SMEs in e-commerce are usually unsuccessful in building loyalty.	Villa et al., 2018; Chouhan, 2017

Source: Own processing.

Table 3
Main and Partial Hypotheses – Summary

Main research hypothesis			Conclusion of hypothesis verification
MH: Enterprises primarily oriented on e-commerce do not apply a comprehensive approach in the process of strategic management in the Czech environment in e-commerce.			Not rejected
Partial research hypothesis	Method of hypothesis verification	Results of hypotheses verification	Conclusion of hypothesis verification
PH1: The importance of the determinants of strategic development in e-commerce is not influenced by the size of enterprises primarily oriented on e-commerce	Kruskal-Wallis ANOVA	Category: General aspects (determinants) of strategic management Mission and vision: $p = 0.0001$ Situation analysis: $p = 0.0005$ Strategic planning: $p = 0.0160$ Corporate strategy formulation: $p = 0.0035$ Corporate strategy implementation: $p = 0.9909$ Strategic control: $p = 0.0000$ Category: Internal determinants of strategic development Corporate culture: $p = 0.0000$ Quality of top management: $p = 0.9988$ Marketing management and strategy: $p = 0.9897$ Financial management and strategy: $p = 0.0000$ Personnel management and strategy: $p = 0.0000$ Logistics management and strategy: $p = 0.8986$ Competitive advantage: $p = 0.9248$ Flexibility: $p = 0.8844$ Innovation ability: $p = 0.0000$ Financial health: $p = 0.9909$ E-commerce security: $p = 0.7396$ Technological maturity of e-commerce: $p = 0.9828$ Payment systems in e-commerce: $p = 0.8990$ Web design: $p = 0.9840$ Reputation and brand: $p = 0.8844$ Category: External determinants of strategic development Orientation in the field: $p = 0.9248$ Ability to work with legislation: $p = 0.8844$ Negotiation with customers: $p = 0.9828$ Negotiation with suppliers: $p = 0.9909$ Struggle with competition: $p = 0.7396$ Online shopping behaviour: $p = 0.9828$	Rejected
PH2: The importance of the determinants of strategic development in e-commerce is not influenced by the size of the assets of enterprises primarily oriented on e-commerce	Kruskal-Wallis ANOVA	Category: General aspects (determinants) of strategic management Mission and vision: $p = 0.0014$ Situation analysis: $p = 0.0001$ Strategic planning: $p = 0.3671$ Corporate strategy formulation: $p = 0.1791$ Corporate strategy implementation: $p = 0.7506$ Strategic control: $p = 0.00010$	Rejected

			Category: Internal determinants of strategic development Corporate culture: p = 0.0000 Quality of top management: p = 0.6716 Marketing management and strategy: p = 0.8241 Financial management and strategy: p = 0.0001 Personnel management and strategy: p = 0.0001 Logistics management and strategy: p = 0.1775 Competitive advantage: p = 0.4664 Flexibility: p = 0.7675 Innovation ability: p = 0.0000 Financial health: p = 0.7506 E-commerce security: p = 0.3091 Technological maturity of e-commerce: p = 0.3375 Payment systems in e-commerce: p = 0.1158 Webdesign: p = 0.4479 Reputation and brand: p = 0.7675 Category: External determinants of strategic development Orientation in the field: p = 0.4664 Ability to work with legislation: p = 0.7675 Negotiation with customers: p = 0.3375 Negotiation with suppliers: p = 0.7506 Struggle with competition: p = 0.3091 Online shopping behaviour: p = 0.3375	
PH3:	All determinants of strategic development are considered by e-commerce enterprises primarily oriented to be equally important, i.e. all distribution functions are equal.	Friedman's ANOVA and Kendall's compliance coefficient	p = 0.00000	Rejected
PH4:	There is no relationship between the determinants of strategic development in e-commerce and the economic performance of enterprises primarily oriented on e-commerce.	Kruskal-Wallis ANOVA	Category: general aspects (determinants) of strategic management WACC: p = 0.05471 ROA: p = 0.61080 ROE: p = 0.60572 Current liquidity: p = 0.19572 Long-term coverage: p = 0.82910 Category: internal determinants of strategic development WACC: p = 0.27845 ROA: p = 0.54613 ROE: p = 0.56138 Current liquidity: p = 0.41424 Long-term coverage: p = 0.99307 Category: external determinants of strategic development WACC: p = 0.15922 ROA: p = 0.60923 ROE: p = 0.29980 Current liquidity: p = 0.19572 Long-term coverage: p = 0.94455	Not rejected

Source: Own processing.