Strategy formulation for international companies based in Sweden

Is Quantitative or Qualitative preferred?

Pontus Rundqvist
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Abstract

As company strategy and its important role in a company continue to be researched, the affects it has on a company is becoming increasingly understood and the positive outcomes it brings. Recent reports even suggest that an average company with $1 billion sales spends over 600000 person-hours per year measuring performance. This makes the process of strategy formulation increasingly interesting for companies, to leverage a better formulated strategy that can guide measuring performance. With this in mind the question “What type of strategy formulation is perceived the most beneficial for international companies operating in Sweden?” becomes relevant and also the question this study aims to answer.

Through a quantitative research method by using a web-based questionnaire as a tool the author uses different techniques to overcome the inconveniences these sometimes bring. The answers were validated by using the Chi-square method. This did not result in a general answer – however it is confirmed that some managers prefer their array of choice to be either truly quantitative formulations or truly qualitative formulations. These findings may be the result of effects such as environmental dynamism which acknowledges the need of further research within the area.
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1. Introduction

It is argued that strategy formulation plays a significant role while negotiating, announcing, rationalizing, legitimizing, selling and the ultimate acceptance of different strategic decisions. (GIMBERT, Xavier et al., 2010) This is mainly accomplished by framing the available information in a concise, explicit and shared manner, and that is where the use of a strategic performance measurement system helps channel potential divergences from different perspectives and it may increase the chance of commonly agreed interpretations (GIMBERT, Xavier et al., 2010). A strategic performance measurement system is used to standardize the formulation process of strategic measurements perceived important to a firm or company. It is continued by Bisbea and Malagueño (2012) that in strategic decision arrays (a series of decisions) that are more comprehensive (such as moderated by a SPMS) may build in righties into the management system. It is emphasized that the rigid effect will be highly affected by how the SPMS is used or constructed.

By utilizing the power in a quantitative study, this work aims to provide the answer to the research question “What type of strategy formulation is perceived the most beneficial for international companies operating in Sweden?”. By looking at different ways of formulating a strategy, and by acknowledging different difficulties, the author wants to further the understanding of the contextual processes and to provide further opportunities of research; to aid the managers in companies by guiding them towards a “best-practice” regarding strategy formulation.

The report begins with a short section explaining the background where the contextual affects are stated and continues on to the aims and delimitations of this study. Via the Methodology section the reader is introduced to the data gathering process of the study and important factors such as selecting the population is explained. The section is concluded with the description of the distribution processes regarding the survey (or questionnaire) used. The next chapter introduces the main theory behind strategy performance measures and explores topics such as:

- Definition
- Measures
- Environmental affects

The report then enters the chapter describing the empirical findings, where the reliability and the validity is being controlled, in order to continue to the last chapters regarding an analysis and conclusion.
1.1 Background

Micheli and Manzoni (2010) states that since the early 1990s the invested money in measuring performance has increased. The same author’s states that recent reports suggest that an average company with $1 billion sales spends over 600000 person-hours per year measuring performance. Wouters (2009) describe that Performance measurement systems (PMS) can serve different functions:

- a) formal devices for control
- b) for the formulation
- c) communication of strategy

… and as such PMS primarily serve higher-level managers. A PMS can be further explained as a system or process to check progress towards any established goals. It may also additionally serve accountability purposes and drive future resource allocation decisions. (KANJI, Gopal K., 2002, p.715)

Many companies has made enormous investments in operations, and they therefore needed Performance Measurement Systems (PMSs) to facilitate improvement of processes (the ability to measure the performance of operations can be seen as an important prerequisite for improvement; to measure the actual realization of the benefits from their investments) [14].

The international context to this work mainly originates within the affects described by Lohman, Fortuin and Wouters (2004): international context synchronization has not only become important across functional boundaries but as companies grow larger also across national boundaries. In Europe, a large number of companies with previously only local production now face the reality of having distribution of goods and customers for the whole of Europe (LOHMAN, Clemens et al., 2004). The same argue that due to this phenomenon, sales and marketing have become partly centralized and in order to manage this new complex organizational structure a strategic viewpoint is required. (LOHMAN, Clemens et al., 2004)

Choi, Hecht and Tayler (2013) highlights when strategic performance measurement systems are most beneficial: when strategic constructs are abstract or illdefined. The same describe the example of a firm pursuing a customer-centric strategy and gauges customer satisfaction using satisfaction survey scores. If those scores are imperfectly measuring customer satisfaction managers’ decisions may be flawed. “The way organisations formulate strategy is a contested area of debate in the strategic management field, strategy development is mainly the result of a systematic, rational process of planning by a top management team, which is then communicated to the organization for implementation.” (GIMBERT, Xavier et al., 2010).

When aligning those performance measures with the companies’ strategy and long-term planning it is important to acknowledge a consequence of aligning strategy and performance measures: managers may lose sight of the strategic construct the measures are intended to represent. (Ijiri [1967, 1975], Kaplan and Norton [1996, pp. 218–219], Choi, Hecht, and Tayler [2012]). (CHOI, Jongwoon (Willie) et al., 2013) Micheli and Manzoni (2010) argue that during strategic change, if the existing measurement system fail to keep up (being radically modified or its role rethought during certain circumstances) it will work as a spring, pulling the organisation back to where it started. It is emphasized by the same that balancing financial and non-financial indicators or lagging and leading indicators can generate both feedback and feedforward loops. The same authors continue that headquarters often tend to restrict their focus on financial indicators in the presence of poor financial results; financial indicators can limit the use as a performance evaluation tool. Customer survey scores is a typical use of quantitative measures, which are also often used within the area of financial performance indicators.
What type of strategy formulation is perceived the most beneficial for international companies operating in Sweden?

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However Chenhall and Langfield-smith (2007) claims that the role of short-term financial measures has been undermined by rapid changes in technology; a result of shortened product life cycles and innovations in production operations (Johnson and Kaplan, 1987, 254–255). (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007). Continuing on the same theme, Micheli and Manzoni (2010) found that using a more diverse set of indicators could help the management and subsidiaries to understand the causes of poor performance, while not solely focusing on short-term results; PMSs could according to the same contribute to strategic alignment. Based on the work made Kolehmainen (2010), it is concluded that Strategic performance measurement systems (SPMSs) have become an integral part of contemporary management practice.1 “[...] it is fundamental for organisations to decide which type of SPMS to introduce [...]” (MICHELI, Pietro and Manzoni, Jean-Francois, 2010) Grafton, Lillis and Widener (2010) also conclude like Kolehmainen (2010) that “Contemporary thinking with respect to the design of performance measurement systems promotes the capture of multiple financial and non-financial performance indicators that reflect the key value-adding activities of an organization.” (GRAFTON, Jennifer et al., 2010) Grafton, Lillis and Widener (2010) continues with their results that in order to encourage managers to use the multiple financial and non-financial performance indicators incorporated in contemporary performance measurement systems it is imperative that the evaluation schemes are also designed to reflect these measures.

One of the challenges are to develop a performance measurement system as an enabler of performance improvement, rather than merely as a control device. (WOUTERS, Marc, 2009) It has been found that operational strategies such as JIT and quality improvement make it relevant to embrace new performance measures. (WOUTERS, Marc, 2009). Chenhall and Langfield-smith (2007) also found some evidence suggesting what is known as non-financial measures to evaluate managers in total quality management situations provides interactive strategic control (Chenhall, 1997). (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007) Micheli and Manzoni (2010) describe how a study of Italian subsidiaries of foreign multinationals found that non-financial indicators are still treated as complementary and not substitute measures of performance, even though increasing emphasize has been placed on the importance of using non-financial indicators.

1.1.1 Strategy and formulation

As Management Study Guide (2016) explains, the process of choosing the most appropriate course of action or the plan that will realize the organization’s business goal is often referred to as strategy formulation or strategy development. The same continues the idea is to realize the vision for the organization and achieve the business goals.

Kolehmainen (2010) introduces two distinct types of strategy formulation: a qualitative and a quantitative. Qualitative research methods are widely used with in social sciences due to its nature and ability to pick up contextual data and surrounding environmental effects (FLICK, Uwe, 2009). Flick (2009) explains: Examples of qualitative research methods are surveys or interviews with open-ended questions. In comparison the same explains quantitative methods are data based and measurable, such as graded scales and data points.
1.2 Aims

The goal and aim of this project is to answer the research question: “What type of strategy formulation is perceived the most beneficial for international companies operating in Sweden?”. This problem originates in the challenges of modern companies that continue to seek financial efficiency and best-practice to how to operate the company bodies effectively. Why? - in order to increase revenues or decrease costs. Looking at strategic performance measurement systems and continue exploring the formulation aspect of qualitative and quantitative performance measurement system formations this work aims to give insight in which of these are the most beneficial for international companies operating in Sweden. The results will be presented in a written report that will lead to future opportunity for deeper understanding of the subject.

“So, hypotheses make statements about relations between variables and provide a guide to the researcher as to how the original hunch might be tested” (BELL, Judith, 1999, p.25)

By conducting a quantitative survey and analyze the results a deeper and wider understanding for the subject will be achieved. To yield as good results as possible much emphasize will be put on the designing of the survey and develop a plan to deploy it. The last part of the study will be a discussion/analyze part, where the findings from the theory will be compared with the quantitative findings. This research will therefore, as described above, be conducted deductively and descriptively with the general question to be analyzed with empirical data gained through a survey (RITZER, George and Schutt, Russell K., 2011).

1.3 Delimitations

As Bell (1999) accurately describes, data collecting will be heavily dependent on the amount of time you have. The task of highlighting the feasibility of the use of qualitative strategy performance measurements in international companies operating in Sweden is a broad subject. This work is therefore delimited by several factors. In order to explore the task it’s been necessary to get an understanding of the research and work done within the research fields of performance measurements, strategic performance measurements and their formulation processes. An initial search revealed the total amount of literature within this research field to exceed the time available to research all of it - due to this a selection of literature had to be made.

By concentrating on cited and referred literature the author limits the amount of literature within this new research area. This study is based on the findings of Katja Kolehmainen (2010) and is also limited to looking at the general picture regarding qualitative versus quantitative strategic performance measurements. This angle of focus is perceived the best way to understand the explicit differences but also understanding the common ground of strategy formulation based on these two types. In turn, to achieve a general understanding the study is limited to a quantitative web-based survey. The choice of using a web-based survey is due to the resource constraints by the study, since it’s a cost-efficient tool. The survey will be based on findings found from literature. The end results will be limited to an analysis and discussion of the findings from the survey compared the literature study.
2. Methodology

This chapter will explain how the study was conducted. To widen the understanding of the subject area, a pre-study was performed. The pre-study aimed to result in an understanding of the research field and to lay the foundation for the later parts of the project. The literature read were chosen based on several key words such as that Kolehmainen (2010) found important:

- Strategic Performance Measurement
- Performance measurement
- Strategic measures
- SPMS

To find any tangential work online databases such as KTH’s “Primo” (KTH - ROYAL INSTITUTE OF TECHNOLOGY, 2014) was used. When a number of authors had been identified, cited work were used to deepen the understanding. As a result, a framework could be developed. This framework was used to identify important factors regarding the formulation of company strategies. Continuing from the framework, a survey was developed and later distributed to a number of companies. The results were thereafter collected and analysed with the theory as a context.

2.1 Choosing the method

The choice of using a quantitative method over any other method is the ability to validate the results, which cannot be done at the same extent with other methods like qualitative methods. Or as Ritzer and Schutt (2011) would describe it, to understand the external world as it really is. This will enable the author to use different operational procedures to reflect and analyze the data gathered. It is to a large extent possible to measure variations and discover any surprising effects. It is continued possible with a quantitative method, to generalize findings based on the sample of the observed units (if valid). It is continued by Ritzer and Schutt (2011) that the observed score or result is a combination of the true value and some error. A way of reducing this (anything from systematic bias to misleading questions) is to validate and especially take pre-emptive measures to reduce them.

The author believe that the quantitative method approach will give more insight into the research question and aid in the analysis far more than any other method used alone. It is emphasized as the most powerful tool in certain occasions, such as this. A quantitative is also recognized by Flick (2009) to be the most unbiased and most secure research method to ensure objective input. Continued, in addition to this a quantitative research method also preserve an unbiased approach to the subject and good researching ethic.

Dillman, Smyth and Christian (2009) describe the history of surveys and from very early on ot was apparent that web surveys had a huge potential. “The cost savings were particularly appealing, as interviewer wages, long-distance charges, postage, printing and keypunching costs associated with telephone and mail surveys are essentially eliminated.” (DILLMAN, Don A. et al., 2009, p.8) The same continues that internet has reached nearly every business, and this allows the use of web-based surveys without reduced survey error. The use of email or web surveys however face the problem of distinguishing their surveys from the countless other contacts people recieves on daily basis.

2.1.1 Sampling

The coverage of the population will be largely dependent on the amount of responses from the population. In order to be able to have a sufficient sample, several techniques to increase the response rate is implemented and discussed in the following section. The use of large
companies ensure that there is a higher probability there is a manager able to answer the questions.

2.1.2 The design of the survey

In order to increase the probability of a successful survey, identifying and integrate lessons learned by other research projects was highly emphasized. Grafton et al (2010) used a sample size of a predetermined amount of receivers (as in this case) to distribute their questionnaire, this to ensure that the sample size was large enough. During this process they offered each respondent a $10 charitable donation on his or her behalf to complete the survey, which unfortunately is outside the limits of this study. They followed this up with 2 reminders to non-responders (in this study, non-responders are not possible to identify) and also by mailing postcards (GRAFTON, Jennifer et al., 2010).

It is argued that more than the underlying statistics need to be considered in order to conduct a successful survey (DILLMAN, Don A. et al., 2009). The same argue that the design aspect of the survey is as important as it may increase the response rate. By considering the different design elements (words, numbers, symbols and graphics) the same authors conclude that organizing questions, provide a standard visual appearance and sub-grouping will provide a more appealing survey. The first question of a survey is concluded to be the most crucial and should appeal to the people taking the survey and provide the necessary interest for the surveyed to continue (DILLMAN, Don A. et al., 2009). The same also conclude that sensitive questions should be put lastly. This is partly researched through an experimental study, where comparing common measures with unique, have shown that managers had cognitive difficulties working with the unique measures (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007)

Dillman et al (2009) also conclude that internet-based surveys are most likely a web-based survey or an email-based survey; “Another alternative to the traditional web survey is to embed questions directly into an e-mail […] but it was argued that e-mailed surveys are mostly impractical because as answers are entered, text in the questions moves, making the final document difficult to process.” (DILLMAN, Don A. et al., 2009, p.199) These are things that was integrated into the design of the survey used in this study.

Another important discovery made by Choi et al (2013) was that during their experiments college students answered differently depending on the order in which the questions were presented: “1) “How many dates did you have last month?” and 2) “How happy are you with your life in general?” The order in which students answered these questions was manipulated between subjects. When students answered the happiness question first, the correlation between their answers to the two questions was negligible. However, when students answered the dating question first, the correlation jumped to 0.66.” (CHOI, Jongwoon (Willie) et al., 2013, p.110)
In this study, the respondents were asked to choose which type of strategy formulation they preferred:

- A qualitative formulation
- A quantitative formulation
- Or if they preferred neither.

One crucial decision was also to make the questionnaire an anonymous survey to lower the threshold for managers to answer honestly. However “Anonymity means that there is no way of linking responses with individuals, so a decision has to be made about follow up before the questionnaires are distributed.” (BELL, Judith, 1999, p.130)

2.1.3 Errors in surveys

There are several important definitions while conducting a survey: survey population (units to be surveyed), sample frame (the list from which the sample is to be drawn in order to represent the survey population), sample (the units that are included in the survey), completed sample, coverage error and sampling error (DILLMAN, Don A. et al., 2009):

- “Coverage error occurs when not all members of the population have a known, nonzero chance of being included in the sample for the survey […]” (DILLMAN, Don A. et al., 2009, p.17)
- “The extent to which the precision of the survey estimates is limited because not every person in the population is sampled is described as the sampling error.” (DILLMAN, Don A. et al., 2009, p.17)
- “Nonresponse error occurs when the people selected for the survey who do not respond are different from those who do respond in a way that is important to the study.” (DILLMAN, Don A. et al., 2009, p.17)
- “[…] measurement error occurs when a respondents answer is inaccurate or imprecise” (DILLMAN, Don A. et al., 2009, p.18)

These error is often called total survey errors (GROVES, Robert M and Lyberg, Lars, 2010). Several methods to avoid these errors are proposed, for example to survey an adequate population with large enough random sample (DILLMAN, Don A. et al., 2009). The same authors describe the motivational drivers for people to respond to surveys differs, both extrinsic and intrinsic. Dillman, Smyth and Christian (2009) provide several ideas of how to (a) increase the percived rewards for responding, (b) reduce the percived cost of responding and (c) establish a trust that the believed rewards outweigh the cost of responding:

- Provide information about the survey: How will the results be utilized?
- Ask for help or advice: Ensure it is believed the survey is helpful
- Show positive regard
- Say thank you
- Support group values: Tailor the survey to convey the support for the particularly group
- Give tangible rewards
- Make the questionnaire interesting
- Make it convenient to respond
- Make the questionnaire short
- Minimize the request to obtain personal information
- Obtain sponsorship by legitimate authority
- Provide a token of appreciation in advance
- Make the task appear important
1.2 Data gathering

2.2.1 Framing the population – Data sources

The population suggested to represent an international company based in Sweden has been set to the 500 companies with the largest turn-over. This decision was made to limit the population from a total 1 127 832 companies currently running in Sweden (SCB, 2014), and it is emphasized that in order to have the highest turn-over an international presence is required. Acquiring this data within the project is outside the scope of the study, and a secondary data source was used. Through the database Orbis it was possible to extract the companies to be used in the study by applying several filters (BUREAU VAN DIJK ELECTRONIC PUBLISHING, 2014):

1. All active companies and companies with unknown situation
2. World region/Country/Region in country: Sweden
3. Operating revenue (Turnover) (th SEK); Last available year, Last year -1, for at least one of the selected periods, Top 500

Drawing on relevant literature that examines SPMS (CHENHALL and LANGFIELD-SMITH (2007), Choi, Hecht, and Tayler, (2013), Kolehmainen, (2010)) the survey is considering constitutive theoretical properties or dimensions of an SPMS such as the integration of long-term strategy and operational goals and the presence of explicit causal relationships between goals and/or between performance measures. (BISBEA, Josep and Malagueño, Ricardo, 2012)

This provided a list of 500 companies that makes up for the population. Based on the work by Chenhall and Langfield-Smith (2007) the questionnaire was developed to reflect 5 key service quality dimensions that is emphasized to reflect the dimensions of a strategy phrasing and formulation:

- Tangibles (appearance of physical elements)
- Reliability (dependable, accurate performance)
- Responsiveness (promptness and helpfulness)
- Assurance (credibility and security)
- Empathy (easy, good communication)

While combining the examples of Kolehmainen (2010), these come together to produce a set of three different answering options which in turn can determine what the leadership perceive as the most useful formulation of a strategy goal in a strategic peformance measurement system. The three options are reflecting three different phrasings are: a (a) qualitative, a (b) quantitative and a (c) neither.

Based on the work done by Dillman, Smyth and Christian (2009) the design elements of different online survey services had to be taken into consideration in order to increase the response rate. Therefore a comparisson was made to identify which service yielded the best conversion. The services in the comparisson table were chosen based on what the author percieved as most referred services throughout the survey community of free online services. By grading the statisfaction levels (Not satisfying, satisfying and more than satisfying) 1, 3 and 5 the service with the highest total score was chosen.
During the design and development of the survey, a small test group of 3 people participated in a test run. The test revealed several problems regarding phrasing, the intuitive and ease of use; the feedback was used to develop a second version of the survey (appendix 1). The group was designed to have no or very little understanding of the research area, but with basic understanding of company strategy and formulation of strategy.

1.3 The sample – looking at the population

The list Orbis (BUREAU VAN DIJK ELECTRONIC PUBLISHING, 2014), with secondary data, provided was somewhat misleading. Frequently Swedish counties and Swedish governmental companies, with no apparent interest in an agenda beside the Swedish perspective, appeared. In order to answer the research question from an international perspectives, these companies were removed from the list. Examples of governmental companies that were considered as outside this study’s report are:

- Södertälje Kommun (SÖDERTÄLJE KOMMUN, 2014)
- Tekniska Verken I Linköping (TEKNISKA VERKEN, 2014)

Continued, while most companies did have an email address stated on their website, or they utilized a contact form, there were still some problems throughout the process of identifying and establishing a contact. For example, some companies would be dismissed from the list due to technical problems with their site, the time limitation was the primary concern while the other contact methods were considered:

Due to these circumstances the final list that originally contained 500 company names, now contained 463 company names after adjusting for companies like the ones stated above, where 143 companies could not be contacted due to technical errors.

2.4 Distributing the survey

The distribution process was a 3-stage process where an email to each company was distributed at least 3 times. As described before, the response rate when it comes to surveys, is the most difficult challenge to overcome. The third stage was considered to be to a supplement to the two first, in case of a low response rate:

Stage 1 Initial stage, an official email address had to be found on their website, in some cases the company in question utilized an online form to contact them, which excluded them from being contacted regarding the survey. A company also became excluded from the list if it only listed an official phone number and the company did not have an official email address.

Stage 2 The first follow-up email was sent to the same email address as in stage 1. This was a friendly reminder to anyone that might have forgotten to participate in the survey.

Stage 3 This step involved sending an email to a person in a manager position, it involved searching each and every eligible company on the list.

Figure 2 - The distribution process
The survey is designed with 6 different questions, five of the questions addresses the service quality dimensions and the sixth question is confirming that the person takes part in the strategy formulation process: Do you in any way take part in the creation of the strategy at your company?
- Yes
- No
If the respondent picks the answer "No" the rest of the answers are irrelevant and discarded. The other group of answers are subjected for the analysis.

2.5 Data analysis

As described by The office of Research Integrity (2016) data analysis is the process of systematically applying logical techniques (or statistical) to evaluate data. It is continued it is a way to distinguish noise from the phenomenon of interest (THE OFFICE OF RESEARCH INTEGRITY, 2016). The same explain the form of analysis is dictated by the specific research approach taken, for instance field studies or questionnaire results.

As an essential part of a research project and in order to ensure the data integrity (such as accurate data, misleads) a reliability and validity test is almost always conducted throughout a research project (THE OFFICE OF RESEARCH INTEGRITY, 2016). It is of ethical importance that the results are not affected by distortions or misleads that may or may not influence e.g public opinion. As recommended by the former, by conducting a series of reliability and validity test on the data it’s possible to highlight areas where the likelihood of biased interference is increased and follow-up action can be performed to either dismiss findings or incorporate it carefully.

2.5 Reliability

“Reliability is the extent to which a test or procedure produces similar results under constant conditions on all occasions.” (BELL, Judith, 1999, p.103)

When it comes to quantitative survey methods where the use of user input is the main source of data, the researcher is always counting on the willingness and help (DILLMAN, Don A. et al., 2009). Therefore the ability to recreate this exact study is possible, however somewhat unlikely. Ultimately the reliability of a survey comes from the response rate and the original population and sample. Like every study depending on good faith, it is not possible to be certain the same person will answer to the study over and over again. However, the data was obtained using methods only available for everyone such as databases (where it is argued that library databases are open for everyone) and webpages, making it easy to recreate the pre-study of the project.

In order to make the collected answers from the questionnaire a reliable primary data source, measures such as performing the same action on every subject (such as finding a contact person for each and every company) was thoroughly conducted. As described by Flick (2009) quantitative research methods also provide the most unbiased and objective subset of data for an analysis. An quantitative data source is therefore emphasized as the most reliable.

2.6 Validity

“Validity is an altogether more complex concept. It tells us whether an item measures or describes what is supposed to measure or describe. If an item is unreliable, then it must also lack validity, but a reliable item is not necessarily also valid.” (BELL, Judith, 1999, p.104)
In order to make safe assumptions from the results a data validity test is almost always performed in the field of science. A data validity test often uses the method of a hypothesis test. It is a commonly used method within the field of statistics, and is used to determine whether a probability of a certain hypothesis is true (WOLFRAM ALPHA, 2014). The most common practice is to formulate a null hypothesis which usually determines whether the results were obtained by pure chance; then a test statistic is identified to assess the truth. The next step is to compute the P-value, "which is the probability that a test statistic at least as significant as the one observed would be obtained assuming that the null hypothesis were true. The smaller the P-value, the stronger the evidence against the null hypothesis." (WOLFRAM ALPHA, 2014). Last step is to compare the p-value to an acceptable significance value. If the p value is less than the significance, the null hypothesis is ruled out and the alternative hypothesis is valid.

For the validity analysis of the empirical data obtained, Pearson Chi-Square test was performed. Pearson Chi-square test is a widely used test of statistical significance and can be performed on categorical data. (CURTIS, Keith and Youngquist, Scott T., 2013) Since the data can be considered categorical and this type of test which also is commonly used within areas like healthcare and other experimental fields (THE JOHNS HOPKINS UNIVERSITY, 2014), the method is considered valid and was chosen for this task.

“The Chi-Square test ($\chi^2$ test) is a family of tests based on a series of assumptions and is frequently used in the statistical analysis of experimental data.” (BOLBOACă, Sorana D. et al., 2011, p.528)

<table>
<thead>
<tr>
<th>Type</th>
<th>Aim</th>
<th>Hypotheses</th>
</tr>
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| Goodness-of-fit | - One sample.  
- Compares the expected and observed values to determine how well the experimenter’s predictions fit the data. | H0: The observed values are equal to theoretical values (expected). (The data followed the assumed distribution).  
Ha: The observed values are not equal to theoretical values (expected). (The data did not follow the assumed distribution). |
| Homogeneity    | - Two different populations (or sub-groups).  
- Applied to one categorical variable. | H0: Investigated populations are homogenous.  
Ha: Investigated populations are not homogenous. |
| Independence   | - One population.  
- Type of variables: nominal, dichotomical, ordinal or grouped interval  
- Each population is at least 10 times as large as its respective sample | Research hypothesis: The two variables are dependent (or related).  
H0: There is no association between two variables. (The two variables are independent).  
Ha: There is an association between two variables. |

Table 1 - Adaption from Bolboacă et. al (2011) of Chi-Square uses
Before conducting the tests, it is important to describe what assumptions are made while conducting a Pearson Chi-square test (BOLBOACă, Sorana D. et al., 2011):

1. The sample size is sufficiently large (otherwise it could lead to a false acceptance of the null hypothesis when false)
2. The minimum sample size varies from 20-50
3. No more than 1/5 of the expected values can be of smaller value than 5

Looking at the data gathered, it is concluded that a chi-square test is a valid statistical method, however the independence test is only valid in this case, due to the fact that there exist one population, and the population is at least 10 times as large as its respective sample.

The validity was tested by calculating $X^2 = \text{Chi-square critical parameter}$ (from the chi-square distribution) and comparing it with the significance level chosen, $\alpha$. The method utilizes the idea of hypothesis-testing, $H_0$ or $H_a$. Either it is concluded, for a certain significance level, that $H_0$ or $H_a$ is a valid hypothesis (BOLBOACă, Sorana D. et al., 2011):

$$X^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{i,j} - E_{i,j})^2}{E_{i,j}} \approx \chi^2 (r-1)(c-1)$$

Where $r =$ row, $c =$ column, $O =$ Observed value, $E =$ Expected value

### 3. Theory

#### 3.1 The development of PMSs

It all begins with a problem, often something close to this: marketing may identify the potential for new products but if these products are feasible to be made is up to the manufacturing and the technologies they possess. This in turn may trigger the human resource management to consider new recruitment and training in order to match the new demands, and all of these steps will have to match the customer revenues. There is a need to understand how different functions contribute to the strategic formulation (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007). To be able to follow through with strategic implementation, and to know how far the organization has come, a need of measuring has been developed. One of the earliest framework developed to put a standardized thinking behind the measurement system was the Skandia Navigator. It was developed at a Swedish finance company and consisted of five dimensions (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007).

How does the company benefit from a measurement framework? Micheli and Manzoni (2010) argue that the benefits from frameworks like the early one described above depend on the very definition of what it should do, and whether the measurements are linked to both formulation and implementation of strategy. In this case, this might affect how the formulation is structured. Grafton, Lillis and Widener (2010) continue that while developing a framework it is of the out most importance that “striking a balance in the use of performance measurement to support both current and future capabilities as a means of securing competitive advantage in a changing competitive environment” (GRAFTON, Jennifer et al., 2010)
“Far too often measurement system implementations fail […] and one of the key issues is how the behavior of people is affected by these systems.” (WOUTERS, Marc, 2009)

It is continued (based on cognitive and social psychology theories) that frameworks like strategic performance measurement systems help the managers to frame the vision that is perceived to be understood, but sometimes is not, by the informational effects (BISBEA, Josep and Malagueño, Ricardo, 2012). One example of how it is of utmost importance that managers perceive the importance of indicators the same is an example by Chenhall and Langfield-Smith (2007):

“[…] varying subjective weighting given by managers to performance measures allowed supervisors to ignore many of the performance measures when undertaking evaluations and awarding bonuses, even when some of those measures were leading indicators of the bank’s strategic objectives of financial performance and customer growth.” (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007)

It is continued that these models were primarily “conceived as tools for the successful implementation of strategy” (GIMBERT, Xavier et al., 2010) and thus SPMSs are primarily seen as a translator of strategy into action. (GIMBERT, Xavier et al., 2010) The same continue that previous research on PMSs have found that the issues with SPMSs are not confined to implementation nor alignment but also with the formulation issues. Or as Micheli and Manzoni (2010) describes it: that as a consequence the motive and purpose of each performance indicator should be explicitly defined. Because, according to the same, the benefits of the measurement system strongly depend on its intended roles. (GRAFTON, Jennifer et al., 2010)

Many positive aspects have been introduced here, however; it is important to acknowledge a few things. Because the environment is dynamic, there will always be room for more improvement (KANJI, Gopal K., 2002) and for example one of those ways is how the performance measurement can encourage appropriate behaviors within the organization. Other studies have shown that although organizations invest large amount of resources into SPMSs, they often fail to bring the intended benefits (MICHELI, Pietro and Manzoni, Jean-Francois, 2010). It may have something to do with the lack of cross-disciplinary studies, which the same authors discuss, as the results has been a fragmentation in this research field as well as “the polarization of the debate among advocates of specific tools and techniques” (MICHELI, Pietro and Manzoni, Jean-Francois, 2010) Continuing, the authors explain that in spite of decades of research it is still inconclusive whether the benefits are as large as argued.

“It is the use of an SPMS, and not the use of any PMS, which contributes to a greater awareness of the multi-faceted complexity of organisational reality.” (GIMBERT, Xavier et al., 2010, p.490)

3.2 Definition

“Performance Measurement Systems (PMSs) are concise sets of (financial and/or non-financial) metrics that support the decision-making processes of an organisation by gathering, processing and analysing quantified information about its performance, and presenting it in the form of a succinct overview.” (GIMBERT, Xavier et al., 2010)

Micheli and Manzoni (2010) argue that the results of a study regarding the definition of strategic performance measurement systems and performance measurement systems shows
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that it is crucial to differentiate between strategic and operational performance measurement systems. The same argue that it’s not solely about the terminology but also about how certain connotation of performance measurement systems has fundamental implications for their use at different organizational levels and impact on particularly the strategy (MICHELI, Pietro and Manzoni, Jean-Francois, 2010).

Recent literature has adopted the definition Gimbert et al (2010) have constructed regarding Performance Measurement Systems (PMSs) and also regarding Strategic Performance Measurement Systems (SPMSs). It is argued that SPMSs are a subset of the more operational focused PMSs. (BISBEA, Josep and Malagueño, Ricardo, 2012) The same continue that PMSs can be:

- Financial
- Nonfinancial
- long-term
- short-term
- internal
- external

Wouters (2009) continues that PMSs in general include a large number of different measures for each unit and that it spans financial performance, customer relations, internal business processes and even learning and growth objectives of the organization.

To be more precise, especially SPMSs serve to support the decision-making processes of an organization, and this can be done through a series of distinctive features such as (GIMBERT, Xavier et al., 2010) This is of interest for this study while developing the survey choices, since the choices have to be designed in a way so that they represent strategic measures and not operational.

Therefore it is concluded by Gimbert et al (2010) and Bisbea and Malagueño (2012) that Performance Measurement System is a general concept in which Strategic Performance Measurements exists. It is natural to continue that line of thinking. Choi, Hecht and Taylor (2013) argue that firms often do rely on strategic performance measurement systems to facilitate managers' strategic decision-making, reinforcing the idea above, and that it is by aligning strategic constructs, initiatives and objectives related to performance measures that allows this. It is also continued by the same that SPMSs function as a framework to organize the firm's information environment around its strategy.

The claims are further explored by Micheli and Manzoni (2010) (BISBEA, Josep and Malagueño, Ricardo, 2012) through the study of business transformation, concluding the same thing; the researchers found that a “considerable component” of the transformation is the adoption of strategic performance measurement systems. (GRAFTON, Jennifer et al., 2010)

However, in order to variegate the perception of SPMSs and PMSs it is important to acknowledge the fact that in spite of decades of practical experience and academic research, strategic performance measurement is still under scrutiny and little consensus has been reached over its benefits and limitations. (MICHELI, Pietro and Manzoni, Jean-Francois, 2010) It may be due to the circumstances Grafton, Lillis and Widener (2010) have explored: that literature on strategic performance measurement is mainly founded on the premise that performance measurement innovation benefits firms' through strategically-aligned metrics that facilitate managerial decision making (GRAFTON, Jennifer et al., 2010).
3.3 Measures

As presented above, several difficulties can be found while looking at SPMSs. One of the more challenging and complex difficulty is to develop valid, useful and understandable performance measures (ITTNER, Christopher D and Larcker, David F, 2003). To further explain; valid in this context is how the measurement of performance by a particular indicator reflect the performance dimension that is intended. (WOUTERS, Marc, 2009) It is however important to understand that the measures have to be somewhat representational in order to fulfill key functions such as being communicable, being evaluable and in order to help develop the strategy (CHOI, Jongwoon (Willie) et al., 2013). Wouters (2009) explore this further and acknowledge that a PMS also can also be a form of diagnostic controls through measuring the actual results, though the main focus today is to e.g. measure employee results, making the PMS primarily serve higher-level managers.

Continuing on that thought, another way in which these measures can serve a key role is e.g. to signal a set of organizationally desirable behaviors and help spread a shared understanding of the objectives (CHOI, Jongwoon (Willie) et al., 2013). It is also of importance to look at the validity and reliability of these measures in order to achieve consistency across the company; consistency is vital in order to cope with the full scope of the organization (WOUTERS, Marc, 2009). Such ideas will therefore has therefore been integrated into the designing of the choices in the survey. The performance measures need to facilitate many different aspects from the whole variety of circumstances the organization is exposed to. In today’s business some authors argue that performance measure could form a hierarchy from the business level all the way through to the activity level in order to overcome the above mentioned problem (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007). Wouters (2009) describes performance measure as a translation of notion of what we call performance into something as simplistic as a number that can be calculated with relevant or available data.

Before continuing it would be somewhat naïve not explaining the difficulty of achieving everything stated above. As Wouters (2009) argues, it is simply a very difficult task to express all the relevant aspects of operational (and strategic) performance. The author introduce the concept of tradeoff between quantitative and qualitative terms while considering the interdependencies between the organizational units. (WOUTERS, Marc, 2009)

There are even evidence that suggests that within certain environments or during certain environmental changes, managers tend to weight a type of measurement over another. (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010) Cardinaels and Van Veen-Dirks (2010) have studied how managers for example tend to weight financial measures more heavily than non-financial measures (as stated before, non-financial measure are of a qualitative nature, and a financial is of a more quantitative nature) for some reasons such as outcome effects, outside pressure and familiarity. Financial measures (e.g sales growth, sales margins) share one especially important factor, they all end up measuring the financial outcome. This should be put in context where non-financial measures tend to put more emphasize on containing a mixture of outcome-oriented measures (e.g. returns to suppliers, retail experience of employees) (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010). Empirical work done Cardinaels and van Veen-Dirks (2010) reinforce this idea as it suggests that people in general are more familiar with and perceive financial as weighing more in terms of reviews from the board for example. And since managers tend to be more familiar with financial measures, these are the ones they fall back to.
To counter this several authors suggest that the dysfunctional impact of these measures can on decision making can be reduced by combining profit-based (financial) measures with non-financial measures (CHENHALL, ROBERT H. and LANGFIELD-SMITH, KIM, 2007).

Kolehmainen (2010) found that a manager at the company where a case study was conducted, argued the same: “At that [individual level] you can combine financial targets, quantitative targets, more value-driven type of targets and very qualitative targets. There is a lot of room for variety. It combines them and links them to concrete strategy implementation. That is why I think it is very important.’ (KOLEHMAINEN, Katja, 2010)” The same conclude that this successful mix most probably has elements of “growth, profitability and productivity, although strategic measures such as market share and customer satisfaction are also included” (KOLEHMAINEN, Katja, 2010) and Kanji (2002) concludes the same “traditional financial measures do not match entirely with the competencies and skills companies require to face today’s business environment.” (KANJI, Gopal K., 2002)

To exemplify such measures, an adoption from Kolehmainen (2010) can further explain the differentiation of measures:

<table>
<thead>
<tr>
<th>Minimum</th>
<th>On target</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting new credit policy documentation in cooperation with all business areas.</td>
<td>Finalising the new credit policy documentation so that it has been approved by all business areas and relevant organisational bodies.</td>
<td>Implementing the new credit policy so that there is evidence of successful cases where the new credit policy has been implemented in practice.</td>
</tr>
<tr>
<td>To develop one new business case.</td>
<td>To develop three new business cases.</td>
<td>To develop five new business cases.</td>
</tr>
</tbody>
</table>

Table 2 - Qualitative strategic target vs Quantitative strategic target (KOLEHMAINEN, Katja, 2010)
3.4 How strategy is formulated for implementation

It is of interest to research how strategy formulation is done in companies today and what drivers are in effect. Because as Kolehmainen (2010) describe, if dynamism is to be built into a SPMS it requires companies to put emphasis on different levels of the organization, not just the top. The same discuss the importance of actual interaction between the subordinates and the managers, in the context of the process of implementing a SPMS throughout the whole organization; from the top management to the individual level.

“[…] the use of performance measurement information for feedback and feed-forward control influences the extent to which an organization is able to exploit and identify its strategic capabilities” (GRAFTON, Jennifer et al., 2010, p.7)

Looking at the context of radical innovation, Micheli and Manzoni (2010) found that SPMSs may add core rigidities and may prevent the movement into a shift into incremental innovation. The same found that the SPMS may force the organization to return to old ways by acting as a spring, pulling the organization back. With this in mind, it is of interest to explore how SPMSs are generally used today.

3.4.1 The SPMS as a practical tool

Kolehmainen (2010) found that much of today’s focus goes towards SPMSs designed from a Balanced Scorecard perspective (BSC). Balance Scorecards help the management by trying to cover all the important areas to which to measure. So what benefits were the BSC supposed to bring? Cardinaels and van Veen-Dirks (2010) explain that balanced score cards were introduced to overcome problems that were direct consequences from a focus on financial measures only. The same explain that the BSC utilize the ability to group financial measures and non-financial measures (such as performance regarding customer or internal business) into different categories. However the design of the BSC can vary significantly across different companies (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010). In this study this is important since financial measures are closely related to quantitative measures and while knowing BSCs are used throughout different companies it is assumed that a qualitative measures (related to non-financial measures which BSCs have introduced in a new way) are not alien to large companies.

One of the main issues, discussed by Cardinaels and van Veen-Dirks (2010) is that evaluators tend to put more emphasis on financial outcomes and measure, not only because of the reasons discussed above, but also because financial outcomes generally is far easier to identify within BSCs, compared to an unformatted scorecard. As a consequence, the same argue that the evaluators give the financial outcomes more weight. Continued, they raise one main issue, that the presentation format highly affect the evaluator, and the grouping between and within financial and non-financial measure very much matters. BSC may therefore trigger the evaluators to believe or perceive the financial measures as more important as for example external stakeholders also tend to weigh these measures more heavily than the rest:

“[…] evaluators using a BSC are more likely to identify financial performance as consistently superior for one business when they assess the financials […]” (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010, p.6).

Looking more closely at the design of the BSC it is also concluded that many companies use similar design or using the same design as other companies. This may very well affect how the evaluators weight the performance measures, foremost through the way it's being presented (in the context of the own company, when the measures more likely reflect the
context of another company) (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010). Particularly important to acknowledge is that some research have found that non-financial measures contain more information content than financial indicators (MICHELI, Pietro and Manzoni, Jean-Francois, 2010) and that BSC is one of the most widely and prominent tool used. The consequences of failing to take notice of the problems could be avoided if the company acknowledge them (CARDINAELS, Eddy and van Veen-Dirks, Paula M.G., 2010).

3.4.2 How to cope
From a previous study made by Gimbert, Bisbe and Mendoza (2010), case-based results show that identifying problems and mistaken assumptions can be detected through revision. At the instrumental level, they argue, statistical methods can be used. This in turn, is argued, can drive companies and its managers to a position where the managers take primary responsibility for measures, enabling the managers to have sufficient leverage to cope with changes in the external and internal context (KOLEHMAINEN, Katja, 2010).

Bisbea and Malagueño (2012) describe that in order to do so, an organization has to adopt an empowering and flexible approach to the design and use of such systems. While alignment processes are needed to ensure that performance indicators and behaviors are in line with the organization’s strategic priorities, they are also needed to build sufficient dynamism into the strategic performance measurement system (SPMS). In order to overcome many of the problems described above, dynamism as part of the SPMS is over and over underlined. In this way, it is emphasized that the problem of incorrectly categorizing a measure as stable (normally not reviewed) is solved (KOLEHMAINEN, Katja, 2010).

When talking about designing strategic performance measurements, strategy formulation is found to be an integral part: "strategy formulation refers to the process through which a firm defines its overall long-term direction and scope." (GIMBERT, Xavier et al., 2010) "[…] managers should design measurement systems that are not there solely for 'diagnostic' purposes, but also include more ‘interactive’, non-financial indicators. […]" (MICHELI, Pietro and Manzoni, Jean-Francois, 2010) We continue to draw upon the strategic capabilities literature to argue that firms seek both stability and adaptability, and that performance measurement both reinforces existing capabilities and signals the need to challenge the status quo. (GRAFTON, Jennifer et al., 2010) Micheli and Manzoni (2010) describe that comprehensive SPMSs can increase managers’ goal clarity and process clarity in business. The same argues that a more comprehensive PMS can make business unit managers believe their jobs are more meaningful.
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4. Empirical findings

4.1 General Data

After a short 3 week period, a total of 62 responses were gathered, and 4 out of there 62 responses were labeled invalid as the control question came back negative. The remaining entries in the list were 463 after adjusting for strictly local Swedish companies and adjusting for non-reachable companies, the total remaining list (or sample) contained 320 companies. This translates to a total response rate of 20%. The following data was gathered regarding the different questions (Appendix 2).

Looking at the results from the survey it is found that not all dimensions are treated equally regarding strategy formulation. While looking more closely to the individual responses (each anonymous response is saved so that each different person chain of choice is saved) it is possible to visualize patterns:

While looking at user choices it is actually found that people tend to choose one set of best perceived formulation. If an extreme is defined as “the user selects 4 or 5 answers within the same choice line (the quantitate, the qualitative or the neither answer)”, it is found that 42 out of 62 responses are categorized as an extreme, which translates to almost 70% (Appendix 3).
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In this study, two hypothesis will be tested in accordance with the theory:
1. H0: The choices were made purely by chance.
2. Ha: The choices were not made purely by chance.

Continued the test requires that there is an expected and an observed frequencies (CURTIS, Keith and Youngquist, Scott T., 2013). The expected value can be calculated using the observed data:

<table>
<thead>
<tr>
<th></th>
<th>Tangible strategy</th>
<th>Reliable strategy</th>
<th>Responsive strategy</th>
<th>Credible strategy</th>
<th>Easily communicated strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative choice</td>
<td>13</td>
<td>26</td>
<td>23</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Quantitative choice</td>
<td>26</td>
<td>15</td>
<td>14</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>I do not prefer one option above the other</td>
<td>23</td>
<td>21</td>
<td>25</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>

Table 3 - Chi-square calculation: observed data

The next step will require the assumption that each row and column are independent. The calculated expected values therefore are:

\[ E_{i,j} = \frac{i_{tot} \times j_{tot}}{i_{tot}} \]

For example, the expected qualitative choice for tangible strategy would be:

\[ E_{Qual, tang} = \frac{112 \times 62}{310} = 22.4 \]

The expected values are therefore:

<table>
<thead>
<tr>
<th></th>
<th>Tangible strategy</th>
<th>Reliable strategy</th>
<th>Responsive strategy</th>
<th>Credible strategy</th>
<th>Easily communicated strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative choice</td>
<td>22.4</td>
<td>22.4</td>
<td>22.4</td>
<td>22.4</td>
<td>22.4</td>
</tr>
<tr>
<td>Quantitative choice</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>
I do not prefer one option above the other

Table 4 - Chi-square test, Expected values

Then it is possible to calculate $X^2$ (critical Chi-square parameter):

|   | E   | O   | O-E | O-E|^2/E |
|---|-----|-----|-----|--------|
| 13| 22.4| 13  | 9.4 | 3.944643|
| 26| 22.4| 26  | 3.6 | 0.578571|
| 23| 22.4| 23  | 0.6 | 0.016071|
| 24| 22.4| 24  | 1.6 | 0.114286|
| 26| 22.4| 26  | 3.6 | 0.578571|
| 26| 18  | 26  | 8   | 3.555556|
| 15| 18  | 15  | 3   | 0.5     |
| 14| 18  | 14  | 4   | 0.888889|
| 17| 18  | 17  | 1   | 0.055556|
| 18| 18  | 18  | 0   | 0       |
| 23| 21.6| 23  | 1.4 | 0.090741|
| 21| 21.6| 21  | 0.6 | 0.016667|
| 25| 21.6| 25  | 3.4 | 0.535185|
| 21| 21.6| 21  | 0.6 | 0.016667|
| 18| 21.6| 18  | 3.6 | 0.6     |

$X^2$: 11.4914

In order to compare the calculated $X^2$ value using a distribution table, the degrees of freedom have to be calculated, which are $n$ (datapoints) minus one. In this case: $15-1 = 14$. The significance level $\alpha = 0.05$ will then result in $X^2_{.995}$ for 14 degrees of freedom (THE PENNSYLVANIA STATE UNIVERSITY, 2014):

$$X^2_{.995} \approx 4.075 \text{ and } X^2 \approx 11.4914 \rightarrow X^2_{.995} < X^2$$

Looking at the cumulative probability $P(X^2 < CV)$ (the summed probability a chi-square statistic falls between 0 and some critical value) (STAT Trek.COM, 2014):

$$P(X^2 < CV) = 0.005$$

Since the cumulative probability $P$ is less than the significance level (0.05) it is not possible to accept the null ($H_0$) hypothesis. It does exist a relationship between the choices and the dimensions of the strategy formulations.
5. Analysis

The results are interesting in terms of reliability and validity. While this study used primarily secondary data which does affect the results, it is deemed reliable since the data was collected from a well-known source. It is however always difficult to foresee the outcome of anonymous surveys. Other researchers have successfully drawn conclusions from similar cases where good faith has been crucial for the accuracy of the study — however it is important to acknowledge the fact that for an individual researcher in a small-scale project, true random sampling is very difficult to achieve. This study is not different — only two of the participants reported they did not fit the description as managers or to be in a management position where they were in a position to affect the organization strategy. It is however, for example, important to understand that there is no common consensus of the word strategy, and that different people might perceive the task of strategy formulation as other than what the author of this study perceive. This is why a lot of emphasize of this short study went into the design of the study and especially the questionnaire; by analyzing other researchers questionnaires and by adopting techniques from experts.

It is also important to acknowledge some of the technical difficulties that might have affected the survey tool and the possibility that a few answers might have gotten un-retrieved. It was by one of the participants that this issue was highlighted; their company still used unsupported (due to age, over 10 years old) web browsers to participate. Due to this, another online survey tool that supported this had to be used. This is perceived as a minor deviation rather than affected the study in a significant way — since the number of participants that couldn't participate should be very limited.

Another important factor to acknowledge is the research which this study is based upon. The majority of knowledge has been retrieved from journals and it is important to acknowledge that these are not the main carriers of scientific knowledge in many fields. Small-scale projects like this are subjected to limited reliability and validity checks, and in this case the repeatability is limited, yet perfectly doable. As a result, it cannot be assumed that a measure will perform in the same way across different studies." (Ritzer & Schutt, 2011, p. 59) With this in mind, the validity chapter brings some interesting observations since the empirical data at first glance revealed non or very little regarding answering the research question this study is guided by.

5.1 Inconclusive findings

Before analyzing the validity part of this study, the first look at the data does reveal the complexity of SPMS. While looking at the data it is important to acknowledge the response rate of the questionnaires is deemed higher than many other similar studies (MOED, Henk F. et al., 2004), however the total amount is still quite few, 62 to be precise. It is noticeable throughout Error! Reference source not found. that the responses were almost uniformly distributed among the choices, giving little more information about whether a qualitative or a quantitative formulation is preferred in the context of strategic work.

While looking at the suggestion CHENHALL and LANGFIELD-SMITH (2007) stated, that by combining financial and non-financial measures dysfunctional impact might be reduced. However while looking at the results from the study, the choice of “neither” could represent a combination of the two other; which was not preferred. This imply that this conclusion might not be correct. It is also not possible to know if managers shift their attention from areas that are not monitored by a senior or rewarded to areas that are. It is therefore not possible to evaluate the perceived importance in term of quantitative versus qualitative formulation. This is something that Bisbea and Malagueño (2012) also mention in the above theory; the
subjective weighting and the managers’ perception of importance is affecting the results, neither a quantitative nor a qualitative formulation can be confirmed as more widely used and preferred. Finally, this is also in opposite to what Cardinaels and van Veen-Dirks (2010) argue; this study did not find that evaluators put more emphasis on financial measure (close related to quantitative). This study actually shows that neither quantitative nor qualitative formulation can be considered preferred.

As introduced in the theory SPMS are help translate strategy into objectives and measures that are supposed to be easily communicated. In this case, while looking at the empirical data, it was found that the preferred the quantitative formulation was slightly favored over the other two choices, but only by a small portion. This might have something to do with what Gimbert et al (2010) introduce as “informational effects”, that the choice of formulation is associated with the mental representation of the environment and their organization. Looking at the findings from the perspective of Wouters (2009) whom described non-financial measures as more actionable, it is not possible to find any conclusions regarding this from this study. As explained before, non-financial measures are more closeley related to qualitative formulated strategies and while looking at the figure above (Figure 6) it is concluded that the quantitative choice was least prefered but not enough to be able to fully confirm that a qualitative choice actually is more actionable.

Micheli and Manzoni (2010) are highlighting the fact that a SPMS can add core rigidities into the organization and therefore act as a spring when the organization try radical innovation. This study show that (a) neither the quantitative nor the qualitative formulation was prefered in terms of responsiveness, (b) the qualitative formulation was only a little more easily communicated that the quantitative and (c) the quantitative formulation was a little more reliable than the qualitative – the findings are somewhat inconclusive and cannot prove nor deny the findings of Micheli and Manzoni (2010) in this case. This fact is opposite to what Micheli and Manzoni (2010) mentioned in the previous chapter as they argue “non-financial measures contain more information content than financial indicators”. This study could not find this. The same also argues that research within this field is still under little consensus, and this study might prove that this is true; it is not possible to draw any definite conclusions.

It is not possible to tell whether Kanjis (2002) theory of continuously improvement opportunities within SPMS are proved or not since the results cannot prove if either the qualitative or the quantitative formulation can bring the intended benefits. Cardinaels et al (2010) argued that performance differences are contained in the non-financial categories, organizing measures into a BSC-format or like in the study above has no impact on the evaluation - suggesting that these results can be analyzed in the context of a BSC-system. Kolehmainen (2010) on the other hand argued that in order to build dynamism into the SPMS a balance between empowerment and alignment needs to be achieved, however the study shows that a balance is not obtained in most of the cases – managers prefer either one array of choices over the other. The validation shows that the managers have actively chosen to follow one array of choices over another, identifying a new area of interest.

Bisbea and Malagueño (2012) have argued that a more comprehensive decision may facilitate more wrongs – could a more comprehensive descision in this case be related to the decision array which managers undergoing this study chose? During the reliability chapter it is found that there is little or no coincidence that the same person chose to go entierly with either one of the three categories of choice. The results indicate that this might be the case, however this can not be fully concluded. The mix of choices might indicate one of the important aspects introduced by Neely et al (2000), that the implementation of the system might fail due to neglecting of the affects different systems or formulations might have. Continued, though the results cannot prove this definitely, the choices are very binary and that might make the information spreading and support of the employees crucial.
5.3 The reliability

The original company data is based on a secondary source, the ORBIS database which is a well-known and used database within the science field. The database is updated annually and should provide reliable data for the population that should be included in the survey. Each survey entry was relying on the cooperation of employees at the companies in which ultimately 62 out of 320 answered. It is important to understand each survey was anonymous and without the option of restricting one survey per company. Therefore it is possible that more than one person at the company answered the questionnaire.

The research method used is however widely used and together with a statistical analysis, the data sets from quantitative studies can be more thoroughly evaluated.

5.2 The validity

Is it possible that the managers participating in this survey have not adopted an empowering and flexible approach to the formulation of a strategy or the use of a strategic performance measurement system? This question may be adopted from the findings which Kolehmainen (2010) argue, however this study could not find any direct answers to this question, while looking at the fact that managers participating in this survey preferred one array of choices, could this mean that they have adopted to a certain environment in which their organization is situated? This is a question this study may not answer but it may be a perfect question for a future survey. Behavior is another dimension that according to Micheli & Manzoni (2010) that the SPMS are supposed to communicate. By looking at the data, it is revealed that managers prefer one choice array, either quantitative, qualitative or neither. It is also proved in the validity chapter that this was not a coincidence. This result indicates, diverging from the other results, that there is a difference between the perception of qualitative and quantitative formulations and that one or the other is preferred by some managers. Kolehmainen (2010) argued that dynamism in context to formulating a strategic performance measure, might be more beneficial and therefore preferred within fast-paced areas such as telecom. This can however not be concluded during this study and might be subjected for further research.

The most interesting finding is the fact that a participant of the questionnaire tended to stick with one array of choice, either quantitative, qualitative or the option of neither. This was became further interesting as it turns out via the chi-square test that it was not a coincidence that a participant only chose one type of choice array.
6. Concluding discussion

While trying to answer the question “What type of strategy formulation is perceived the most beneficial for international companies operating in Sweden?” the answer is – it is not possible to clearly say. The analysis did however uncover scientific valuable insights regarding distribution of answers. It is found that managers prefer to go with one array of choices, be it qualitative or quantitative. This can be a result of the effects explained earlier by Choi et al (2013): the order of questions can have an impact on the physiological aspect of choosing an option. To counter the effect, in this work’s survey the answering options were randomized and the result therefore points at something else as to be the cause. Does this mean that there are managers that perceive the qualitative or quantitative formulation more beneficial? This study find the answer to this question to be, yes there are, however it is also found that neither one of the formulation is the universal choice for every manager. It is therefore concluded that there are managers that are perceiving either quantitative, qualitative or neither to be the most beneficial for their organization, assuming the managers perception and the authors perception of the questionnaire is the same and if it actually were managers answering the questionnaire. This is supported by the findings through the Chi-square test which support the claim that the choices made in the questionnaire were not done randomly assuming the choice array logging by the IT services was correct and that the calculations are correct. A potential cause to the result can be the set of companies ultimately interview or questioned. The final list contained companies operating in a wide variety of fields, each with different goals and measurements. It is possible a certain line of business favor a certain line of strategy formulation. This is an aspect recommended to be explored in future research.

These findings support the idea that some managers do perceive one or the other formulation as more beneficial however it does not answer the question of which of them to be perceived as most beneficial to a reliable degree. It is possible that these findings are a result of different perception of the word strategy or that different formulation are perceived more beneficial in different circumstances. These are opportunities for further research. It is also possible that there might be other factors that affect this study, such as human psychology, is at works. Due to the time limit of this project supporting study methods such as qualitative methods did not fit the time frame, which could enhance the reliability of this study further.

It is also important to highlight the difficulties with questionnaires and the research model used. Questionnaires are a difficult method to use, since it requires action from the participant to which the goal of the questionnaire might not be seen beneficial or “worth the time”. That difficulty was present during this study, where follow-up action was required. It is possible that the response rate would increase if using the $10 charitable method described in the “Design of the Study” chapter, or if it was possible to mail surveys to non-respondents, but this was not possible due to the limit of the study and the fact that it was an anonymous survey. It is also important to observe the sample size of the study – was it large enough to be used in terms of the general case? Can a company or organization be generalized to such a degree in the first place? The population, sample size from the population and ultimately the result from the questionnaires answered by the sample is still deemed interesting. With a response rate of 20% it’s far beyond the response rate surveys generally have. Although the result raises more questions than answers, the statistical validity and the reliability of the research method should be considered good. These are also further points of interest for future research.

While discussing the sampling, it is important to acknowledge the errors that may occur. To explain it further, it is not possible to follow-up and control for instance, what business type is over or under represented with the choice of anonymous questionnaires. However, it is emphasized that the population is large enough to cover all relevant business areas and that
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...this type of errors will be mostly overcome – and the result should reinforce the belief the sample size was large enough to give credibility to the statistical analysis of the project.

It is also important to acknowledge the fundamental problem with constructing this kind of study based on journal articles and books. Do they cover the research field in general? It is possible that important dimensions or factors that affected the outcome of this study was affected by factors not researched, which might be covered by further research.
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7. Bibliography


FLICK, Uwe. 2009. An Introduction to Qualitative Research. SAGE.


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http://www.scb.se/sv_/Vara-tjanster/Foretag--och-myndighetsregister/Foretagsregistret/Aktuell-statistik-ur-Foretagsregistret/


https://ori.hhs.gov/education/products/n_illinois_u/datamanagement/datopic.html


Appendix 1

6 question survey about strategic performance measurements

You have been selected to participate in this survey. Please click "Begin" to start.

BEGIN

6 question survey about strategic performance measurements

1. Do you in any way take part in the creation of the strategy at your company?

1. Är du i någon utsträckning delaktig i formuleringen av strategin vid din arbetsplats?

- Yes
- No

2. (Choose one option) You are phrasing a tangible strategy, which of the alternatives below do you prefer?

(Välj ett alternativ) Du ska skriva en konkret strategiformulering, vilket av alternativen nedanför föredrar du?

- "Drafting new credit policy documentation in cooperation with all business areas."
- "To develop one new business case."
- "I do not prefer one option above the other."
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3. (Choose one option) You are phrasing a **reliable** strategy, which of the alternatives below do you prefer?

- Finalising the new marketing documentation so that it has been approved by all business areas and relevant organisational bodies.
- To develop three new business cases.
- I do not prefer one option above the other.

4. (Choose one option) You are phrasing a **responsive** strategy, which of the alternatives below do you prefer?

- Implementing the new quality policy so that there is evidence of successful cases where the new quality policy has been implemented in practice.
- To develop five new business cases.
- I do not prefer one option above the other.

5. (Choose one option) You are phrasing a **credible** strategy, which of the alternatives below do you prefer?

- Drafting new credit policy documentation in cooperation with all business areas.
- To develop one new business case.
- I do not prefer one option above the other.
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6. (Choose one option) You are phrasing an easily communicated strategy, which of the alternatives below do you prefer?

6. (Välj ett alternativ) Du ska skriva en enkelt kommunicerad strategiformulering, vilket av alternativen nedanför föredrar du?

- "Finalising the new marketing documentation so that it has been approved by all business areas and relevant organisational bodies."
- "To develop three new business cases."
- "I do not prefer one option above the other."

Thanks for taking this survey!

THANK YOU!
Due to your contributions, our knowledge of strategy performance measurements will increase! The final results will be available at http://www.diva-portal.org/ by August 2014.

TANK!
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Appendix 2

You are phrasing an easily communicated strategy, which of the alternatives below do you prefer?

- "Finalising the new marketing documentation so that it has been approved by all business areas and relevant organisational bodies."
- "To develop three new business cases."
- "I do not prefer one option above the other."

You are phrasing a responsive strategy, which of the alternatives below do you prefer?

- "Implementing the new quality policy so that there is evidence of successful cases where the new quality policy has been implemented in practice."
- "To develop five new business cases."
- "I do not prefer one option above the other."

You are phrasing a credible strategy, which of the alternatives below do you prefer?

- "Drafting new credit policy documentation in cooperation with all business areas."
- "To develop one new business case."
- "I do not prefer one option above the other."

You are phrasing a reliable strategy, which of the alternatives below do you prefer?

- "Finalising the new marketing documentation so that it has been approved by all business areas and relevant organisational bodies."
- "To develop three new business cases."
- "I do not prefer one option above the other."

You are phrasing a tangible strategy, which of the alternatives below do you prefer?

- "Drafting new credit policy documentation in cooperation with all business areas."
- "To develop one new business case."
- "I do not prefer one option above the other."
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Appendix 3

How many "extreme" answers were given, where "extreme" answers are 4-5 choices within the same answering line?

- Quantitative choice: 12
- Qualitative choice: 16
- Do not perform one of another: 14

Number of answers