

INVESTIGATING THE EFFECTIVENESS OF SUSTAINABILITY INTEGRATION STRATEGIES IN BUSINESS SCHOOLS: A COMPARATIVE STUDY

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Abstract

This research study examines the relationship between two business school's academic and operational engagement and their strategies for sustainability integration. The effectiveness of these strategies is studied through their impact on business students' sustainability perception, their corporate social responsibility (CSR) attitude, and their current behavior regarding sustainability. Based on a quantitative approach and a sample of 158 business students from two well-reputed business schools (i.e., Jonkoping International Business School (JIBS) and Gothenburg School of Business, Economics, and Law (GOTBS), we employ an independent sample t-test to assess our research hypotheses. Our findings suggest that the impact of sustainability integration strategies used by business schools is significantly different. That is, a business school that uses operational engagement in addition to academic engagement is more effective than a business school that uses academic engagement only for sustainability integration. More specifically, we found that business students' sustainability perception, their CSR attitude, and their current behavior regarding sustainability are better in schools that use operational engagement than the business school that does not use operational engagement. This implies that for sustainability integration, it is important to provide practical demonstration and opportunities to business students to make them responsible future business leaders.

Keywords: Sustainability, Responsible Management, Future Business Leaders, Sustainability Integration Strategies, Academic Engagement, Operational Engagement

1. INTRODUCTION

Sustainability increased in popularity among researchers in disciplines related to the environment, social science, and business management. Business leaders are becoming the primary influence in the sustainable business puzzle. They are the core of the sustainable business and the decision-making process, supporting sustainability. Moreover, Anninos and Chytiris (2012) emphasize that the corporate interest in sustainability indicates that educational interventions should be designed that work on a more personal and deeper level for future leaders and managers. Therefore, a change from the profit orientation of business toward sustainable business is needed and

personal development. Such a change should have its genesis at the educational level [1]. Researchers agree that business education is the key approach for global benefits and prosperity to influence future business leaders in sustainability [2] [3]. Today, the business demands well-educated professionals who can manage a business and do it sustainably. Thus, business schools today must fulfill this demand and implement effective strategies to incorporate sustainability in their educational structure.

Researchers see universities as social institutions responsible for maintaining the norms and values of a society [4]. Higher education has responsibilities in teaching and, therefore, promotion of sustainability should be included among those responsibilities today for the benefit of community [3]. The authors posit that Higher Education Institutions (HEIs) are organizations in their own right with economic, social, and environmental imperatives. These HEIs can promote sustainability not only through core activities such as teaching, learning, and research but also through their operational activities. Because HEIs have different social accountability and stakeholder engagement, these institutions specific responsibilities for sustainable development are approached differently than other public and private organizations [3]. Regarding business schools, [5] advocates for the importance of integrating sustainability in management education based on its ever-increasing importance for effective management. Future leaders should be trained adequately for emerging challenges and business schools are a powerful platform to do so. The educational purpose of HEIs puts individual responsibilities on business schools toward society. Corporations also have sustainable duties toward society, although on a different level which differentiates business schools from corporations. It is essential to admit that business schools play the role of supplier of human resources for corporations; therefore, the relations between both partners are significant.

Business leaders are created at business schools [6]. Unfortunately, research shows that business students are less ethical and more influenced by corruption than students from other professions. This can explain why The Wall Street Journal Index showed 800 articles written about crime in the "White Collar Profession" in 1989 [7]. This trend increased with time, and crimes transformed into big scandals, putting global corporations in an ethics spotlight [8]. Consequently, business schools became obligated to include ethics and sustainability in their curriculums [1]. Moreover, the demand for sustainable leaders creates additional pressure for schools to adjust to present realities. In addition, business students, as part of society, also increased their interest in schools offering business programs with elements of sustainability and ethics, which generates another reason for business schools to implement sustainability [9].

Global organizations such as the United Nations also became aware of ethical problems among students at business schools. Therefore, in 2007 the United Nations Principles for Responsible Management Education (UN PRME) was created. The goal was to develop fundamental principles as a basis on which business schools worldwide can implement sustainability. Such standardization is needed to create a foundation for future leaders to communicate in transparent, uncomplicated language about sustainable business among themselves. UN PRME started six principles as a foundation for educational institutions

to follow. Comparison studies showed that business students from different continents might have different tolerances for ethical constructs of fraud, coercion, and self-interest [10] and different sensitivity to the damage associated with unethical decisions [11]. This indicates the need for shared principles on a global level. UN PRME was also created in response to societal pressure for sustainability after 1990. One example is the need to integrate ethical factors with business activities and strategies [12], similar to other topics related to sustainability [13].

Another example is initiatives to make the campus environmentally friendly, including sustainable materials used for new buildings or renovating existing ones, water use control, and waste management. Researchers observed the inclusion of sustainability implementation initiatives in business strategy in many parts of the world [14]. Based on this, UN PRME presented principles on which business schools can build and evaluate their implementation of sustainability. One of the UN PRME's requirements is a reporting system called Sharing Information on Progress (SIPs) which enhances transparency and creates a learning platform. The entry into the UN PRME initiative in its first two years of operation reflects the high popularity of UN PRME among business schools which continues with 17% of growth [15].

This study aimed to investigate the effectiveness of sustainability implementation by business schools through academic and operational engagement. As discussed earlier, some business schools only integrate sustainability through academic engagement, whereas others integrate sustainability through academic and operational engagement. Based on this background, this study examines the effectiveness of academic engagement exclusively and academic engagement in support of operational engagement for integrating sustainability. Specifically, it aimed to find out to what extent these strategies are different concerning their impact in terms of creating attitudes towards corporate social responsibility, perception of sustainability, and behavior towards sustainability among students to develop an understanding of sustainability integration strategies for future business leaders based on the theory of planned behavior and Socialization, Externalization, Combination, and Internalization (SECI) model.

2. METHODOLOGY

2.1 Research Approach

The philosophy of research refers to making assumptions as human beings regarding the nature of the world around us [16]. According to [17], an ontological stance is based on two paradigms, objectivism and subjectivism, and each of these paradigms has its devotees among business management researchers. Subjectivism attaches importance to studying in greater detail to understand the meaning behind different truths with the notion that reality has many facts [17]. Meanwhile, objectivism attaches importance to viewing reality from a scientific perspective through empirical indicators with the idea that reality has only one truth [17]. This study aims to examine the effectiveness of different strategies for sustainability integration through their manifestations in sustainability

perception, behavior, and the attitude of students towards sustainability and social responsibility in JIBS and GOTBS. It is important to note that this research is based on an objective point of view rather than a subjective point of view. This is because we have a clear idea of the investigated research topic, and thus we can realistically create surveys that can be used to collect the required data. Epistemologically objective researchers discover the truth through observable and measurable facts that produce credible and meaningful data, thereby adopting a positivist position [17]. Saunders et al., (2016) explain that a positivist researcher might use existing theory to develop hypotheses that would be tested. We have also used the theory of planned behavior to create ideas. These hypotheses are illustrated using the frame of reference explaining different concepts from literature and theories. In addition, the hypotheses developed led us to collect data through surveys. These data provided the basis for testing the hypothesis [17]. According to Crotty (1998), the data collected in positivist research is measurable and quantifiable, so it is easy to remain neutral and detached to avoid influencing research. In other words, the researcher and the investigated are separate and independent units; therefore, a phenomenon can be studied without influencing or being influenced [18]. Because of the measurable and quantifiable data, a positivist researcher remains external to the process of data collection. In this research study, we are external to the data collection process and conducted the study objectively. The responses are collected through online questionnaires where the plausibility of influencing respondents' answers by our values does not exist. Positivist researchers are more likely to use a highly structured methodology by emphasizing quantifiable observations for statistical analysis to facilitate replication [19]. In this research study, a highly structured methodology is emphasized by using the pre-developed questionnaires through surveys, the data used to test the hypothesis through statistical analysis using a t-test. Hence, in this study, the ontological stance used is objective research with a quantitative paradigm based on positivism philosophical research.

2.2. Theoretical Approach

The chosen quantitative research approach is usually associated with a deductive approach, focusing on using the collected data to test a theory [17]. For this reason, the research approach used in our research is that of a deductive approach, where data was collected, and statistical tools were used to test the collected data. Saunders et al. (2016) explain three theoretical approaches: deductive, inductive, and abductive. If research begins with a theory mostly developed after reviewing literature and then a strategy is designed to test the theory, this is the deductive approach. Whereas research starts by collecting data to explore a phenomenon and then develops an idea. Then it is the inductive approach. There is a third approach, the abductive, combining both approaches mentioned above [17]. In this study, as the research started with a theory that was decided on after reading the academic literature, we then designed a research strategy to compare two sustainability integration strategies and collect data through surveys. We have used the deductive approach. According to Saunders et al. (2016), the deductive approach is characterized by four main elements. The first one uses a highly structured

methodology to ensure replication, mainly done by collecting quantifiable data. This research uses a questionnaire tool to collect measurable and quantifiable data, for which the reliability factor is also calculated using Cronbach's alpha to facilitate replication. The second characteristic is the operationalization of the concept that enables facts to be measured [17]. In our research, using a predeveloped questionnaire to measure concepts like perception, CSR attitude, and behavior towards sustainability helps us quantify these concepts and collect data that can be tested. The third characteristic is reductionism, followed in our research by breaking down all variables into the simplest possible elements to understand the whole problem. The final characteristic of the deduction is a generalization, which is ensured by selecting a sample carefully to be of sufficient size [17]. In this research study, based on the population of both schools, the sample size is nearly 30% of the total population, which is a good representation and enables us to generalize the results. Hence, our chosen quantitative study follows a deductive approach to testing a hypothesis using the data collected through questionnaires.

2.3. Research Method

According to Saunders et al. (2016), one of the critical choices in research design that needs to be made is whether to follow qualitative, quantitative, or mixed methods. Each method has a set of elements that are different from the others. In general, quantitative research is differentiated by numeric data as compared to qualitative research, which is determined by non-numeric data. Therefore, a qualitative approach emphasizes data collection techniques such as interviews and focus group discussions, and its data analysis procedures are based on these non-numerical data collections [17]. Generally, data techniques include interviews and observations to conduct a deeper investigation [16]. Qualitative research aims to gain an in-depth understanding of the problems and issues of the subjects or respondents under study [20]. In the quantitative approach, researchers clearly understand what they are researching; therefore, they can use tools such as questionnaires or surveys to collect data [21]. The quantitative research methods help collect data through which relationships between variables, measured numerically, can be examined. Through the quantitative method, data are collected standardly and analyzed using statistical tools [16]. This relates to our research in all aspects described above. We have a clear idea of what needs to be researched. Also, we cannot always observe students to note their CSR attitude, behavior, and perception regarding sustainability. Therefore, data collection techniques such as survey questionnaires made it practically possible for us to overcome the issue related to the distance of our investigated phenomenon. Hence, we chose the quantitative method for our research design, rather than a qualitative one. The quantitative method and its association with positivism and the deductive approach in our research study assign coherence to the research design of our study.

2.4. Research Design

Researchers of this study consider themselves explorers of the unknown. Extant literature elaborates on implementing sustainable strategies; however, no studies compared any

of the mentioned strategies. Therefore, exploratory research will be used in this study. Implementation strategies described in frames of reference have been functioning for some time, but nobody knows how effective they are and what their impact is on sustainability awareness. Therefore, by following [22], this study will check what is happening and look for new insights. To link exploration with quality, we will follow three principles presented [23] a search of the literature, interviewing 'experts' in the subject, and conducting focus group interviews. The third principle will be adjusted, and the focus group will be replaced with a survey of students to measure their perception of the topic rather than their opinion. Moreover, the survey is more appropriate to fulfill the sample criteria regarding quantitative research.

2.5. Sampling

2.5.1. Sample Selection

The effectiveness of strategies toward sustainability can be measured by the perception, Current Behavior, and CSR Attitude of individuals affected by the strategy. Therefore, we focus on the students at business schools who were influenced by the school's strategy. Master students who received a bachelor's degree from a different university than the master's program can affect the previous school and the data. Thus, we consider bachelor students only. Moreover, first- and second-year students might not strongly influence the sustainable strategy, which can affect the survey data. Finally, the population, which contains a full set of cases [22], can be defined as final-year bachelor's students at the selected business school. The population number is set as 5551. This population was affected by the sustainable strategies for over 2 years and should reflect a certain level of strategy effectiveness. Also, students from the population most likely, were not influenced by other higher education institutions. Saunders et al. (2017) argue that it can be impractical to survey the whole population. In the case of this study, some of the students might not participate in the survey for specific reasons unpredicted by researchers. Those cases are defined as missed cases. For this reason, probability sampling was conducted in this study. To fulfill the requirements of probability sampling, each individual is chosen entirely by chance and each member of the population has an equal opportunity of being included in the sample [22]. The questionnaire was distributed among students by email containing a link to the survey created on the Survey Monkey webpage. The email channel was the only channel we could use since final-year bachelor's students focused on their thesis and in-person accessibility was impossible. Due to this limitation, we know that the response rate can be below. The response rate from JIBS was 31%, and from GOTBS, 26%. Since the population of JIBS is smaller than that of GOTBS (JIBS 249, GOTBS 306), a response quota was set based on the JIBS responses. An allocation allows us to make an even comparison between dimensions. When the quota number (79) was reached from the survey of GOTBS, the rest of the responses were rejected. There is a possibility that a limited number of students could have previously participated in another bachelor's program somewhere else. Therefore, a control question was implemented to eliminate cases not influenced by the school's strategy. Students were asked if they had previously had sustainability involvement in

other programs or courses. 81% of answers of the entire population were set as No, which gives 128 cases. 19% of responses were set as Yes, which offers 30 cases. The results are presented in Table 1. If yes, a supporting question was asked to determine if the present school improved sustainability knowledge. In this instance, all 30 cases provided a Yes answer, making those cases valid for the research. If respondents answered No, those cases would be excluded from the research since there would be no evidence that the current school's sustainability strategy influenced the given case in the three measured dimensions. Moreover, based on those cases, this study would not conclude which strategy is more effective.

Table 1: Control question distribution

Questions	Number of answers	Percentage (%)
yes	30	19.0
No	128	81.0
Total	158	100.0

2.5.2. Selection of Schools

Many schools around the world adopt sustainability implementation strategies. To keep the research context in balance, this study focuses on business schools in Sweden. Only schools participating in the PRME initiative were considered. During our preliminary research, we reviewed the SIPs of various schools. During this process, we learned that some schools integrate sustainability through academic engagement; others use academic along with, and others use academic and operational engagement. This requirement was needed to have authorized access to a sustainability report called Sharing in Progress Report (SIP). This report was used as a primary data source to identify schools with strategies for this study. In addition, a small, semi-structured interview was conducted with the school representative involved in implementing the sustainability strategy by the school. The discussion with experts plays a vital role in exploratory research and is mentioned as principle number two [23]. The complete questionnaire is presented in Appendix B. The schools selected for this research were JIBS and GOTBS.

JIBS signed up with the UN PRME on 26 March 2013. This school was identified as using an academic engagement strategy. The criteria for implementation of sustainability strategy related to academic engagement, described by academia, and clearly illustrates the main focus of JIBS [24]. This school emphasizes the importance of sustainability elements in programs and courses and encourages research related to sustainability. The school's focus is mostly on the staff providing education with sustainability elements. Information gathered from the reports and interviews with the experts allows this study to identify the academic engagement strategy even though the school does not describe such a strategy officially. Recently, the formal strategy development is discussed in the newest report dated 23 March 2017. As of 6 May 2017, JIBS is recognized by UN PRME as an advanced level signatory (Details for Jonkoping International Business School,

2017). GOTBS signed up with the UN PRME on 22 October 2010. This school was identified as using academic engagement and operational engagement strategies. The criteria for implementation of sustainability strategy related to academic engagement, described by academia, and clearly illustrates the main focus of GOTBS [24].

This school emphasizes sustainability implementation in education, research, and operational activities. Regarding academic engagement, GOTBS offers programs and courses related to sustainability and implements elements of sustainability in various courses not strictly related to sustainability. The challenge for this school is that the curriculum offered to students also includes law and economics, which as mentioned by the expert, is more challenging for implementing sustainability than the business administration curriculum. Regarding operational engagement, GOTBS strongly supports student clubs across a variety of areas related to sustainability and organizes live labs which are focused on student involvement and research at the same time. For instance, a solar panels project by which the school monitors its CO₂ footprint and works toward decreasing it. The strategy identified by this paper was based on the SIP report, for which information is available on the main page of GOTBS, and an interview with the expert. As of 6 May 2017, GOTBS is recognized by UN PRME as an introductory level signatory (Details for The School of Business, Economics, and Law at the University of Gothenburg, 2017). The interview at JIBS was conducted with Marcela Ramirez-Pasillas, PRME Project Manager responsible for the sustainability strategy implementation. Marcela is also the leading creator of JIBS's SIP report in 2015 and 2017. The interview with the expert from GOTBS was conducted with Mattias Sundemo, the coordinator responsible for sustainability. Mattias is also responsible for the information presented in SIP 2016. Mattias was part of the team creating many sustainability projects that run in GOTBS. To increase the quality of empirical data, the accessibility of schools by researchers was also considered in the school's selection.

2.5.3. Demographic data

The first demographic question was related to gender. This open question allowed all participants to respond without making any gender limitations freely. In the research, we got an even distribution of females and males. In this research, 74 males participated, which gives 46.8% of the sample, and 78 females, which showed 49.4% of the entire sample. The unknown category identifies cases where the question was not answered or specified other than male or female. The unknown option was identified with 6 cases, which gives 3.8%. The summary of the gender results is assembled in Table 2. The table below shows the allocation of students in the sample based on the study program. GOTBS has three business studies programs at the bachelor's level. These comprise Business and Economics, Logistics Management, and Environmental Social Science. JIBS also has three business studies programs at the bachelor's level. These consist of Inter-national Management, Marketing Management, and International Economics. It should be noted that JIBS currently has more than three Bachelors-level study programs, but they started recently and are not relevant to our research study. Since our study is considering final-year Bachelor students at both business schools to ensure sufficient

exposure of those students to sustainability efforts of their schools in terms of academic and operational engagement, the recently started program must therefore be excluded to achieve credible results for our research. A total of 158 responses were received together from both schools. Out of 79 respondents from GOTBS, 43 are from the Business and Economics program, 16 are from Logistics Management, and 20 are from Environmental Social Science. Similarly, out of 79 respondents that participated in our research study from JIBS, 51 were from International Management, 17 were from Marketing Management, and 11 are from International Economics. In terms of percentages, respondents from Business and Economics of GOTBS and International Management of JIBS constitute the highest rate, 27.2% and 32.3%, respectively. Each of these programs has the highest number of students compared to other programs at bachelor's levels, so this might be the reason for the higher percentage of respondents from these programs. Respondents from Logistics Management and Environmental Social Science of GOTBS comprise 10.1% and 12.7% of the total response rates.

Similarly, respondents from Marketing Management and International Economics of JIBS comprise 10.8% and 7% of the total response rate. It can be noted that the highest number of respondents were from the International Management program of JIBS. In contrast, the lowest number of respondents were from the International Economics program of JIBS. Regarding respondent comparison between schools, GOTBS has the highest number of respondents from the Business and Economics program, which is 43, and the lowest number of respondents is from the Logistic Management program, which is 16. Likewise, in JIBS, the highest number of respondents is from International Management, 51, and the lowest number of respondents is from International Economics, 11. The quota of respondents was set based on the lowest response number from one school and set with the second school on the same level. The allocation was formed on 79 cases from each investigated school. In this way, the research reached an equal distribution of responses, which supports fair cooperation among the dimensions. The total number of responses was 158.

Table 2: Demographic data – Gender wise

Gender	Number of Cases	Percent (%)
Male	74	46.8
Female	78	49.4
Unknown	6	2.8
Total	158	100.0

2.6. Data collection

For this study, the primary data collection was the main source of empirical data. To collect strong material for the quantitative research, we conducted a questionnaire survey measuring awareness of sustainability among students. This data collection supports exploratory analysis and allows researchers to collect data highly economically [23]. This study compares sustainability strategies; therefore, data compiled by survey allows straightforward use of variable and statistical tests, which is the central part of quantitative

research. The survey consists of four parts. Part, one focuses on standard demographic information such as study program, gender, and age. The following three parts are related to the dimensions used for this research. The first dimension focuses on sustainability perception (questions: 1-5 environment, 6-8 economy, 9-12 society). This dimension is based on the previously done research by Kagawa (2007). Part two focuses on the second dimension and measures the current behaviors (questions: 13-17). This part was based on the research conducted [25]. The third part of the survey represents the attitude toward CSR (questions: 18-24) and was created based on the research conducted [26]. In addition, a control question was added to eliminate cases that show no influence of the current strategy on sustainability integration. Answers for parts 1-3 are collected based on 5 points of the Likert scale, while part four uses Yes or No answers and descriptive answers. The complete questionnaire survey is presented in Appendix A.

2.7. Data analysis

The fully collected data were analyzed using a t-test. According to Saunders et al. (2016), the t-test compares the difference in the means of the two groups using a measure of the spread of the scores. In our research, one group is the school with academic engagement only, and the other is the school with academic and operational engagement. Suppose the likelihood of any difference between these two schools occurring by chance alone is low. In that case, it will be represented by a significant statistic with a probability less than 0.05 [17]. This is termed statistically substantial. To compare the effectiveness of strategies, this study focuses on three dimensions: Perception of Sustainability, Current Behavior, and CSR Attitude. The given dimensions are represented by the questions formulated by the previous research and were presented to students in questionnaires from two selected schools. The sum of responses from one school and one dimension was compared with those from the same dimension but another school. Such a comparison was conducted with all three dimensions. Perception of Sustainability compares the difference in perception of sustainability between students from two schools that were selected in the preliminary process. The aim is to see how the chosen school's strategy influences the given school's perception. The comparison was based on the answers to the questions in these dimensions. This dimension contains 12 questions: the first five are related to environmental aspects, the next three are concerned with economic aspects, and the last four questions of this section ask about social aspects. Kagawa (2007) formulated questions for this dimension in his article [25]. Current Behavior compares two groups of students from different schools based on how they behave at school and in everyday life. Since the control question was also asked of all students to determine whether studying in the current school influenced their sustainability knowledge, the results of this dimension can also show which strategy is more effective. The effectiveness is based on the summary of responses from one school students compared with answers from the second school. In their article, Eagle, Low, Case, and Vandommele (2015) formulated questions for these dimensions [25]. CSR Attitude this dimension compares students' attitudes toward CSR from two selected schools. This dimension aims to see the perspective of future leaders related to their future occupation

in the business field. These dimensions can emphasize how the current sustainability strategy of the selected school prepares its students for future careers as sustainable leaders. Haski-Leventhal (2013) formulated questions for these dimensions in his article. In addition to the above-discussed dependent variables, the two other independent variables, such as GOTBS - the first one is Gothenburg Business School, which has implemented academic and operational engagement to integrate sustainability [27]. JIBS - The second independent variable is Jönköping International Business School, which has implemented academic engagement only to integrate sustainability. However, it is essential to notice that both schools represent two different implementation strategies for sustainability integration. For statistical analysis purposes, the comparison between these strategies is made through their school representation. It can be seen that JIBS represents academic engagement, whereas GOTBSGOTBSGOTBS represents academic engagement along with operational engagement represents academic engagement along with operational engagement.

2.8. Empirical data testing

A t-test was conducted on each of the three dimensions to evaluate the effectiveness of sustainability strategies. The numerical data collected from the survey set each dimension as the dependent variable. Two independent variables in the form of the selected school were used to run the t-test. In this way, the authors of this thesis were able to compare responses from students from two different groups, two selected schools, on each dimension, namely, Perception of Sustainability, Current Behavior, and CSR Attitude. The purpose of the t-test was to see if students' responses from selected schools vary on given dimensions. Therefore, hypotheses were developed based on the existing literature and stated in point Theory of Planned Behavior 2.8. The t-test allows researchers to accept or reject the stated hypothesis for each dimension where the general structure of the hypothesis is formulated. H_0 , the dimension at the selected schools, shows no significant difference between the groups of students. H_A , the dimension at the selected schools, shows a significant difference between groups of students. All three dimensions were tested with a 95% level of confidence.

2.9. Research validity and reliability

Quantitative research aims for high reliability and validity, which can be gained by the consistency of the data combined with a properly designed questionnaire [17]. Questionnaire questions can be checked from three assessment approaches: test-retest, alternative forms, and internal consistency, which is sufficient to reach reliability and validity [28]. This study tested the reliability of the correlation of the questionnaire and checked if the internal correlation was present. The purpose was to see if there were correlations between responses among each other. According to Mitchell (1996), this approach measures the consistency of subgroups in the questionnaire and questions in general. For the consistency level, a Cronbach's Alpha test was performed. The value of the test higher than 0.7 indicates more reliable data collected. The values of the

completed test on the questionnaire were higher than 0.7 and are presented as follows [28].

Table 3: Study programs distribution of the sample

Program	Number of cases	Percent [%]
Business and Economics	43	27.2
Logistic Management	16	10.1
Environmental Social Science	20	12.7
International Management	51	32.3
Marketing Management	17	10.8
International Economics	11	7.0
Total	158	100.0

Sustainability Perception

The Cronbach's Alpha test for the sustainability perception dimensions was 0.766. Since the test result is higher than 0.7, we conclude that this collected data is reliable. In addition, this test was conducted on the 12 elements in the form of questions. The results summary is presented in Table 4.

Table 4: Cronbach's Alpha - Sustainability Perception

Cronbach's Alpha	Number of Questions
0.766	12

b) Current Behavior

The Cronbach's Alpha test for the sustainability perception dimensions was 0.954. Since the test result is higher than 0.7 and close to 1, we conclude that this collected data is reliable. In addition, this test was conducted on the five elements in the form of questions. The results summary is presented in Table 5.

Table 5: Cronbach's Alpha - Current Behavior

Cronbach's Alpha	Number of Questions
0.954	5

a) CSR Attitude

The Cronbach's Alpha test for the sustainability perception dimensions was 0.827. Since the test result is higher than 0.7, we conclude that this collected data is reliable. In addition, this test was conducted on the 7 elements in the form of questions. The results summary is presented in Table 6.

Table 6: Cronbach's Alpha - CSR Attitude

Cronbach's Alpha	Number of Questions
0.827	7

2.10. Research Ethics

Easterby-Smith, Thorpe, & Jackson (2015) have described ten key principles in research [29]. Out of these ten, six principles deal with protecting research participants, whereas the remainder deals with the integrity of the research community in general. In conducting our research study, we have tried to ensure all ten principles to the best of our ability. Regarding the protection of research participants, we have provided that no harm came to participants as the nature of our research is not to perform any experiment in which respondents are the subject. We have maintained the dignity of the research participants by ensuring that they are informed through a statement in the questionnaire about the nature of the research and whether it is of their will to participate in this survey or not. Privacy is maintained by coding the questionnaires that can only be used to identify which business school the respondent belongs to. This differentiation is necessary as our research compares the strategies of two schools. Besides that, no survey question can reveal the respondent's identity. Before circulating the survey, the authorities of both schools made the commitment to treating the data confidentially. It also ensured anonymity by not asking for any information that discloses respondents' identities. The primary source of our data collection is the survey questionnaire. However, small interviews with experts from both schools were also conducted. In these two interviews formal consent for participation was taken through various emails. The emails explained why we were conducting these interviews and how we would use the data. Their willingness to disclose their names or remain anonymous was also ensured. Both experts gave their consent to disclose their names and assured full cooperation. Concerning the ethics principle related to protecting the integrity of the research community, we have strictly avoided deception. We clearly stated and discussed the nature and aim of our research in the survey and the interviews. We have ensured honesty and transparency in communicating our study by maintaining email trails and sharing the survey and interview questionnaires beforehand. Copies of our research thesis have also been shared with both schools in response to their request and to be completely transparent in communicating about the research.

3. EMPIRICAL FINDINGS

For all three dimensions, the T-test was used since we were comparing JIBS and GOTBS variables. The test allowed us to examine the difference between two independent variables, namely JIBS and Gothenburg, in three dimensions set as dependent variables: Sustainability perception, Current Behavior, and CSR Attitude.

3.1 Sustainability Perception

Following is the hypothesis for Sustainability Perception,

1. H0: The sustainability perception of students shows no significant difference between selected schools.

2. HA: The sustainability perception of students offers a substantial difference between chosen schools.

Table 7 shows that the mean level of sustainability perception of students at GOTBS is 51.35, and that of students at JIBS is 44.43. The value lies at a 0.05 level of significance, which supports our research hypothesis. An independent-samples t-test was conducted to compare the sustainability perception of students GOTBS and JIBS. There was a significant difference in the scores for GOTBS (M=51.35, SD=3.78) and JIBS (M=44.43, SD=5.48) conditions; $t(156) = -9.236$, $p = 0.00$. The Cohen's d is 1.47.

With the p-value < 0.05, we can reject the H0 hypothesis, and with 95% confidence, we can conclude that perception at JIBS and GOTBS is different. Moreover, based on the mean value, we can conclude that sustainability perception at the GOTBS is higher than in JIBS.

Table 7: Mean comparison - Sustainability Perception

Business School	Number of cases	Mean	Std. Deviation	Cohen's d
JIBS	79	44.4304	5.48584	1.47
GOTBS	79	51.3544	3.78268	

3.2. Current Behavior

The following is the hypothesis for Current Behavior:

1. H0: The current behavior of students regarding sustainability shows no significant difference between selected schools.
2. HA: The current behavior of students regarding sustainability shows a significant difference between selected schools.

Table 9 shows that the mean level of Current Behavior of students at GOTBS is 21.46, and the mean level of Current behavior of students at JIBS is 11.54. The value lies at a 0.05 level of significance, which supports our research hypothesis. An independent-samples t-test was conducted to compare current behavior regarding the sustainability of students of GOTBS and JIBS. There was a significant difference in the scores for GOTBS (M=21.46, SD=1.44) and JIBS (M=11.54, SD=4.04) conditions; $t(156) = -20.54$, $p = 0.00$. The Cohen's d is 3.27.

With the p-value < 0.05, we can reject the H0 hypothesis, and with 95% confidence, we can conclude that the current behavior at JIBS and GOTBS is different. Moreover, based on the mean value, we can conclude that current behavior at the GOTBS is higher than in JIBS. In other words, students from GOTBS behave more sustainably than those from JIBS.

3.3. CSR Attitude

Following is the hypothesis for CSR Attitude,

1. H₀: The sustainability perception of students shows no significant difference between selected schools.
2. H_A: The sustainability perception of students shows a significant difference between selected schools.

Table 11 shows that the mean level of CSR attitude of students at GOTBS is 29.89, and the mean level of CSR Attitude of students at JIBS is 20.56. The value lies at a 0.05 level of significance, which means that our research hypothesis is supported. An independent-samples t-test was conducted to compare the CSR attitude of students of GOTBS and JIBS. There was a significant difference in the scores for GOTBS (M=29.89, SD=3.98) and JIBS (M=20.56, SD=2.43) conditions; $t(156) = -9.236$, $p = 0.00$. The Cohen's d is 2.82.

With the p -value < 0.05 , we can reject the H₀ hypothesis, and with 95% confidence, we can conclude that CSR attitude at JIBS and GOTBS is different. Moreover, based on the mean value, we can conclude that CSR attitude at the GOTBS is higher than in JIBS.

4. ANALYSIS AND DISCUSSION

This study aims to identify the more effective sustainability strategy business schools implement. The effectiveness is based on elaborating and comparing empirical data in three dimensions: sustainability perception, current behavior, and CSR attitude. One strategy implemented by JIBS focuses on academic engagement. A second strategy implemented by GOTBS focuses on academic and operational engagement. Academic engagement is used by both schools, which is the primary purpose of educational institutions [30]. Both schools apply this strategy to provide courses about sustainability and research in the sustainability field. Therefore, similarities in the level related to academic engagement have been observed. The effectiveness of such an approach can be seen by sustainability perception.

Students at both schools have current behaviors. With its strategy of academic engagement, JIBS can shape and influence students' behavior and induce them to behave more sustainably. GOTBS, with its strategy of academic engagement and operational engagement, offers instruction on how to behave sustainably and sets an example by conducting sustainably, as elaborated by the expert from GOTBS. The involvement of educational institutions can strongly influence students' behavior, especially when it comes to being a role model in sustainability. Both institutions shape future leaders and offer business education. Therefore, CSR attitude plays a vital role in determining whether sustainability strategies used by JIBS and GOTBS influence future leaders who will be involved with business matters. Both schools offer CSR education, as was elaborated by the experts from both institutions, which affects the individual's attitude. This is in line with the research by Haski-Leventhal (2014) [26]. Based on the planned

behavior theory, how the attitude is shaped will impact intention and behavior later. Since GOTBS, on top of educational engagement, offers operational engagement based on empirical findings, we can see that additional effort creates additional value in sustainable behavior. Besides educating, educational institutions also aim to generate knowledge in the form of thesis and scientific publications. Therefore, we see a direct link between the SECI model and the effectiveness of sustainability strategies. Understanding how this model works in an educational institution can significantly explain the elaborated strategies' differences. Evaluation of the three dimensions shows the influence of the strategy and, at the same time, the effectiveness of the sustainability strategies implemented by the schools. Based on the empirical data and statistical tests, we can compare each dimension, observe whether there is a difference, and elaborate further on the efficiency of the implemented strategies.

4.1. SECI Model in Educational institution Environment

The SECI model is built on implicit and explicit knowledge concepts [31]. The model shows that knowledge circulates between tacit and explicit knowledge and expands by the contribution of individuals. This is expressed as an accumulation of knowledge known as the knowledge spiral. This is what research on an academic level is about. Identify a problem, research a gap, and based on previous knowledge, conduct the research, and fill the gap with one's contribution. Based on the research of others, one can contribute with one's research, which increases available knowledge. The build-up of knowledge and the accumulation of knowledge is considered a contribution to science that can later be used in a more practical perspective. Previous research also provides motivation and inspiration for the further expansion of knowledge. Therefore, we see great importance in using the whole path of the knowledge spiral and not only part of it. The preliminary interview with the experts and the SIP reports showed the large role the knowledge spiral can play in sustainability strategies. Moreover, the SECI model can help to explain why one sustainability strategy can be more effective than another on the spectrum of all dimensions identified in this research. It is important to acknowledge that the university and business school research can benefit the most from properly using the SECI model. The SECI model shows how the educational institution can generate knowledge for itself and the general contribution to science as a research purpose. This study sees a linkage of educational engagement with the externalization mode, where tacit knowledge is converted into explicit knowledge [31]. This can be represented by conducting research based on observation with the theoretical frame of reference, which can lead to thesis and scientific publications. Moreover, this model also includes elaboration on study cases, student project reports during the study, and propositions from the external curriculum, such as student club initiatives. At this stage, knowledge is elaborated during group work and meetings. Next, ideas and updates to the projects are developed and tested. A popular technique of brainstorming can also help to develop ideas further. Later on, knowledge can be shared more easily and categorized, which helps individuals interested in this knowledge access it. This knowledge transition happened in the combination mode based on the SECI model. This mode is characterized by the systematization, gathering,

and connecting knowledge [31]. Knowledge in explicit form can be spread during lectures in articles, books, PowerPoint slides, etc. This is very much in line with the educational engagement strategy. This paper identifies the externalization and combination mode as academic engagement, focusing on research and teaching. At this stage, we see the educational purpose being fulfilled, and research is conducted and shared later in teaching. The next mode, internalization, is expressed as learning by doing. This model expresses that tacit knowledge has to be used and tested in practice by simulations and experiments [31]. This mode can also be represented by implementing student initiatives in reality. In this way, a project developed in a classroom can be materialized and made visible to others. Projects can also be materialized to benefit the community, for example, the student community. A simple example might be waste management, developed by students and used on campus to benefit the entire student community. Similarly, explicit knowledge gained from articles, publications, student reports, and external curriculum initiatives can be combined and materialized in practice. Therefore, the combination mode in this study is strongly associated with the operational engagement strategy. Internalization allows individuals to absorb explicit knowledge and convert it into tacit knowledge by implementing ideas, projects, or thoughts in reality and possessing the know-how of this process. Lastly, the socialization mode allows the tacit knowledge to be spread to other individuals, sharing the know-how. This model is based on the empirical perception of experiencing things around us [31]. We learn by trying things, observing situations, or just seeing how things are organized and managed. This mode also elaborates on sharing experiences on a personal level with other individuals. For example, students can advise each other on improving study techniques and making study more effective. They can share experiences and make suggestions about which ones work best. The same logic applies to the projects and initiatives implemented on the campus. Natural curiosity can raise questions from new students about how waste management is managed at the campus. The waste management system can be improved or adjusted through personal involvement to benefit society more. Based on the responses, we see that students would like to see the university be more involved in implementing practical projects and initiatives regarding sustainability. Moreover, initiatives supported by the university will likely be seen as more valuable and, based on the SECI model, this can spark inspiration for new projects. In other words, the results of implemented projects can be visibly spread, evaluated, and create new inspirations for future updates or new research, which can continue and expand the knowledge spiral.

To offer a practical example based on one of the selected universities, we can use the study case from GOTBS, whose aim was to make schools greener. In 2014 students at GOTBS were given an assignment based on the financial benefits of installing 200m² of solar panels, which could potentially be installed on the school rooftop. The aim was to establish the case's financial economic and environmental applications. The PRME coordinator initiated the case from GOTBS and conducted it in a challenge competition. Groups participating in the challenge formulated the idea in the form of reports. After that, reports were spread among a wide range of individuals, including the organization which

owns the building. . This is very well represented by the externalization mode described [31].

Spreading knowledge in documents, blueprints, and manuals is associated with the explicit knowledge and combination mode [31]. With the combination mode, reports and ideas can spread faster and to a broader range of potential receivers. The idea of the group was positively praised and was given the green light to be implemented. The university supported the implementation, and the implementation process involved the university and the property owner. The performance of the final project was the materialization of explicit knowledge into tacit knowledge. During this process, students learned practical skills such as negotiation, meeting participation, and witnessing the decision-making process. The mentioned practical skills can never be taught solely by academic engagement; therefore, the internalization mode represents operational engagement. The solar panels were installed in 2015, and the campus now has its renewable energy source. This project stays within the campus and provides a practical example of sustainability. New students can be inspired by the project and be stimulated to suggest more new ideas related to sustainability.

Moreover, seeing the school's engagement in supporting sustainable ideas makes the school a role model. In addition, solar panels, as a visible proof of sustainability and an approach for reducing the school's CO2 footprint, create an environment that expresses concern for sustainability. Godemann et al. (2014) argue that the study environment expressing the idea that the school is preaching positively stimulates the students to follow the school's teaching approach [30]. In other words, when students see the behavior of the school as consistent with what they learn is appropriate, it is most likely they will follow the same pattern. This also can be elaborated based on the empirical findings. The school with academic engagement only showed lower scores in all dimensions than those with academic and operational engagement. The visibility of the mentioned project is also an element that will stay on campus and can be part of the discussions and opinion exchange, leading to new inspirations for projects and initiatives. As described, knowledge gained by the students during the implementation can be spread and shared with other students through discussions and the general expression of the learned skills. This is associated with tacit knowledge and the socialization mode. As a result, the authors of this thesis can argue that operational engagement can be described by the internalization and socialization modes. Based on the empirical findings, we can see that the sustainability strategy with only academic engagement shows lower mean values in the statistical test than in the sustainability strategy where academic engagement is used together with operational engagement. With the support of the SECI model, it is clear that academic engagement and operational engagement complement each other in the form of knowledge creation. Business schools as knowledge creation places should open themselves and allow knowledge to be generated in research rooms and change the university into a stimulating environment to inspire the whole student and staff community toward new ideas related to sustainability. Moreover, implementing the

ideas can impact school involvement in society or the environment and change the campus and space where future leaders are created and knowledge expansion.

4.1.1. Critique of SECI model

The SECI model is constructive in explaining the knowledge conversion between and within tacit and explicit knowledge. This enables us to demonstrate the importance of practical demonstration of concepts like sustainability to complement knowledge and implementation of such an important global issue. However, Stacey (2001) argues that tacit and explicit knowledge are treated as separable elements in this model, whereas these should be regarded as complementary. As for explicit knowledge to be understood, tacit knowledge becomes necessary. This critique by Stacey (2001) further strengthens our argument for the importance of operational engagement, which facilitates knowledge conversion of explicit knowledge and vice versa [32].

4.2. Sustainability Perception

The sustainability perception in JIBS and GOTBS is significantly different. The results of the t-test (Table 8) show that the sustainability perception of students from GOTBS is higher than that of students from JIBS. Both schools attach vital importance to educating students concerning sustainability. This is in line with the research conducted by Gitsham and Clark (2014), showing that implementing sustainability in the curriculum is significant [33]. This is clearly presented in the SIP report, and experts elaborated on it during the preliminary interview. The sustainability perception part of the survey was divided into three segments: economy, environment, and society. By taking a closer look at the questions and analyzing responses in detail, it is clear that the sustainability perception circulates in the high positive part of the scale. This shows that sustainability is present in the curriculum of both schools and that academic engagement strategy influences students. This statement is also supported by empirical findings in answers to the control question. All respondents indicated that their present school significantly influenced their knowledge improvement in sustainability. Despite that, some cases were participating in other programs or courses in the past, but they claimed to have improved their sustainability knowledge at the present business school.

Responses for the questions related to the sustainability perception dimension show a low difference between the students from JIBS and GOTBS. However, the statistical test shows a significant difference. Since both schools use academic engagement and follow the UN PRME principles, additional factors make the difference important. After closer analysis of the SIP and other secondary data combined with the preliminary report, we identified two main factors that might have the most robust input in the difference between students' responses from the two selected schools in the sustainability perception dimension.

1. Both schools are part of the PRME and closely follow the PRME principles. Both experts indicated the importance of the principles as a part of the academic engagement strategy. The factor that might impact the perception can be the date

when each school joined the PRME initiative. GOTBS joined on 22 Oct 2010, and JIBS joined on 26 Mar 2013. The additional time gave an advantage to GOTBS in setting sustainability traditions in educational engagement. Moreover, the period could also stimulate research based on sustainability and familiarization with PRME principles.

2. Education is the main purpose of educational institutions. Therefore, for many years educational institutions competed with each other. As a result, there was intense competition and, based on the Universal Business School ranking (2016), GOTBS has a higher position than JIBS. This can influence the quality of education, including education about sustainability.

Both factors described above can impact the sustainability perception of students from the selected schools. Students from both schools express sustainability perception on a high level. However, sustainability traditions and educational quality might explain why students from one school have a higher perception. Of course, many other factors can influence individuals to be stimulated better.

Table 8: T-test results - Sustainability Perception

Equal Variances Perception	Levene's Test		T-test for equality of means		
	F	Sig.	t	df	Sig. (2-tailed)
Assumed	7.039	0.009	-9.236	156	0.000
Not assumed			-9.236	138.496	0.000

4.3. Current Behavior

This dimension focuses on what students do to be more sustainable or even their habits in everyday life. Some questions asked about actions we perform unintentionally, for example, "I always switch the light off when I don't need it." This approach allows us to see which students behave more sustainably. The t-test showed a significant difference in current behavior between students of JIBS and GOTBS. Moreover, students from GOTBS expressed that current behavior is more sustainable than students from JIBS. By comparing the means from each school's test, JIBS 11.5 and GOTBS 21.5, we can see that the difference is more significant than 100%. Also, by analyzing the responses to the questions, we can see that the difference is significant. This remarkable difference can be the effect of each school's choice of sustainability strategy. Research shows that the educational approach can influence students' behavior (Bogner and Wiseman (2006). Therefore, this research shows a direct connection between the school's strategy and students' current behavior. This includes the educational engagement strategy and the strategy where educational engagement and operational engagement are used. Godemann et al. (2011) argue that the environment in which students spend time also influences the students' behavior [24]. In our research, we see that the school where academic and operation strategy is used created a more sustainability-friendly

environment, which most likely positively impacts students' behavior in everyday life. This was also proven by the results, which show that the school with academic and operational engagement, GOTBS has a higher mean of responses than the school with an academic engagement strategy only. Most likely, this can result from the environment created on the campus, which positively influences students toward more sustainable behavior. JIBS uses educational engagement in preaching about sustainability; however, there is no demonstration of the school's implementation. We can compare this situation to when parents forbid kids to smoke and educate them about the health consequences of smoking, but they smoke themselves. Such an approach can influence students to behave in a certain way even though they know this behavior is inappropriate. For example, accounting students can learn about ethical accounting and still look for loopholes in tax regulations to maximize profit rather than be strictly ethical. With educational engagement, the school can influence the subjective norms of the individual. GOTBS, in addition to educational engagement, also uses operational engagement in its sustainability implementation strategy. This approach is a source of educational knowledge, and at the same time, the school acts as an example, which supports what is being taught during the lectures. Godemann et al. (2011) argue that setting an example for what promotes positively influences others [24]. Such stimulation of subjective norms in the form of support and real-life examples sends a complete signal to students to have intentions to act sustainably. GOTBS is an example of what is taught to the students by introducing a sustainable campus. In this area, the focus is on practical examples and how organizations, an educational institution, in this case, can be sustainable in practice. Therefore, we see what one says as a substantial influence to encourage sustainable behavior in students. This can also explain why students from GOTBS behave more sustainably than students from JIBS. The example factor fits the SECI model very well. Based on this, we can see intense stimulation on students, which affects the sustainability implementation strategy used by GOTBS.

The authors of this thesis see an additional aspect that might influence GOTBS's students to behave more sustainably. Both schools follow PRME principles and SIP reports indicate vital concern for implementing all school regulations. However, GOTBS puts more effort into following these additional recommendations regarding the addendum. Combining academic engagement and operational engagement under the sustainability strategy helps create a supportive environment for sustainability. In this environment, schools become a leading example of sustainable behavior. The sustainability implementation strategy results from the environment and the leading example. The additional effort of operational engagement is seen to strongly impact students in their current behavior. Visiting the school as a role model can influence subjective norms of students and increase intentions to behave more sustainably. Research results and the theory of planned behavior clearly show why students from GOTBS behave more sustainably than JIBS. Moreover, implementing the addendum from PRME is a form of role model behavior by GOTBS.

Table 9: Mean comparison - Current Behavior

Business School	Number of cases	Mean	Std. Deviation	Cohen's d
JIBS	79	11.5443	4.04081	3.27
GOTBS	79	21.4684	1.44857	

Table 10: T-test results - Current Behavior

Equal Variances Current Behavior	Levene's Test		T-test for equality of means		
	F	Sig.	t	df	Sig. (2-tailed)
Assumed	40.488	0.000	-20.549	156	0.000
Not assumed			-20.459	97.722	0.000

4.4. CSR Attitude

The CSR Attitude aimed to see how the implemented sustainability strategy by the school's influenced students in their future business fields. The results also show a difference in CSR Attitude between JIBS students and GOTBS students. The mean of GOTBS is 50% higher than that of JIBS students (JIBS – 20.7 GOTBS- 29.9). The results indicate that students from GOTBS will likely become more sustainable business leaders than those from JIBS. The attitude can be shaped with the support of proper education; however, the theory of planned behavior also elaborates on the influential role of subjective norms on attitude (Ajzen, 1985). Therefore, focusing only on injunctive norms and the value importance of CSR while neglecting descriptive norms can create confusion which most likely will affect the CSR attitude. This statement is in line with Rasche and Gilbert (2015), who argue that teaching but not following what has been said by the teacher leads to disparagement [34].

The analysis of the responses from JIBS shows a variety of answers given by students in the CSR Attitude part. This is clear evidence that students from JIBS have a confused attitude toward CSR, resulting from misleading signals sent by the school. In other dimensions than CSR, students from JIBS responded to the same question in a pattern of similar answers. However, regarding the CSR dimension, the responses to the same question cover the whole range of the answers, which seems unusual. We believe these results from the sustainability implementation strategy focusing only on academic engagement.

On the one hand, the educational perspective signal is strongly vital about the importance of CSR, which positively influences injunctive norms. On the other hand, we didn't see a strong demonstration of descriptive norms concerning CSR, which sends a misleading signal. Both signals can create confusion which most likely can impact the attitude of students can create confusion which most likely impact students' attitude. When a comparison was made with the other independent variable, we could see that the situation differs between the selected schools. The difference is based not only on statistical tests

but also on how students responded to the questions. Responses of students from JIBS were within the full range of answers. The reactions of students from GOTBS were repetitive, indicating that students have a clear attitude toward CSR. The survey results showed that students from GOTBS have a more precise attitude toward CSR. The responses to a particular question were aimed for the same answer. This unique difference was identified only by comparing JIBS and GOTBS on the CSR attitude dimension.

In summary, students from GOTBS showed a more robust CSR attitude than students from JIBS. However, the more exciting aspect accrued from how students responded to the questions rather than whether there was a difference or not. The responses of JIBS students were given on a broad scale, indicating that individual students' CSR attitude is very different. This can result from confusion about whether students genuinely believe in CSR or not as an affective attitude. Students can also be confused about the purpose of CSR and see no benefits in it, which represents an instrumental attitude. The analysis of responses from GOTBS exposed repetitive answers, which is evidence that a similar CSR Attitude unites this group of students. This indicates that there are no misleading signals and that the students share a similar attitude.

Table 11: Mean comparison - CSR Attitude

Business School	Number of cases	Mean	Std. Deviation	Cohen's d
JIBS	79	20.5696	2.43734	2.82
GOTBS	79	29.8987	3.98264	

Table 12: T-test results - CSR Attitude

Equal Variances	Levene's Test		T-test for equality of means		
	F	Sig.	t	df	Sig. (2-tailed)
CSR Attitude					
Assumed	8.875	0.003	-17.758	156	0.000
Not assumed			-17.758	129.239	0.000

5. DISCUSSION

The results of the t-test from all three dimensions (sustainability perception, current behavior, and CSR attitude) showed significant differences between the exact dimensions among students from selected schools. Different dimensions showed different levels of contrast. Based on the mean comparison, sustainability perception did not differ much. Since sustainability perception is associated with a general knowledge of sustainability, we see a relation of this dimension to academic engagement. Both schools include academic engagement in their strategies, therefore, we see similar results in this dimension in empirical findings. This result can simply mean that students from both schools possess similar sustainability perceptions resulting from a sustainability

implementation strategy focused on academic engagement. Teaching and research are HEI's primary purposes, and it looks like both selected schools put a lot of effort into implementing sustainability in teaching and research. The statistical test showed a significant difference in the date of joining the PRME initiative and educational level.

The situation is different when it comes to the current behavior dimension. Here the statistical test also showed that there is a significant difference. Moreover, the mean comparison shows that the difference in responses is double. We know that students have current behavior not only from the school's influence but also from family, friends, and other influential sources. Since we researched in Sweden, where the context and culture are the same, we assume that these additional influence sources are equivalent. Thus, we believe the only difference influencing students current behavior comes from the school and its strategy. The behavior dimension is associated with operational engagement, implemented by only one school. This difference also proves why the statistical test shows the difference in such a scale, based on the mean comparison. The analysis showed that this difference is related to the school's actions. The school's activities are noted by students, reflecting on their intentions and behavior. Since we are comparing two schools with no focus on operational engagement, students cannot see the actions toward sustainability. The lack of precise moves shows neglect of activity and sustainable behavior. The wreckage of such an action does not influence individuals to behave in specific ways, however, neglect of such behavior but discussion of the importance of acting this way creates confusion. The best example is the parent who encourages children to engage in physical activity for health benefits but not exercise themselves. We can see that this creates disparagement.

Therefore, we know the importance of combining academic and operational engagement in a single strategy to signal to students that the school implements many factors, including teaching and research. Such a signal is sent to students by the school through both engagements under the sustainability integration strategy. We can see that the strategy combined with engagement provides knowledge about sustainability and demonstrates the knowledge in action, which gives a complete picture to stimulate students. A similar situation comes with the third dimension of CSR attitude. Here we tried to test how the sustainability integration strategy can influence students with the CSR attitude, which can be related to the future leader occupation. This dimension is also associated with operational engagement since the school's actions will reflect on students and most likely affect students' behavior after graduation. The higher mean resulting from the statistical test at school combined with engagement proves that students from this school will most likely make more sustainable decisions in their business careers. On the other hand, students exposed only to academic engagement might possess knowledge, but there are doubts that they will behave in line with that knowledge since they were not exposed to such behavior. CSR attitude and current behavior dimensions are associated with operational engagement; therefore, sustainability integration strategy can strongly influence tests in given dimensions, which was exposed in the empirical findings.

Lastly, our most robust attention was given to the SECI model. Knowledge creation at the HEI and contributions to the science world have high importance for HEIs. Therefore, it is essential to combine academic engagement with operational engagement. As shown in Figure 1, academic and operational engagement a implemented and knowledge creation are implemented. Moreover, the practical implementation of projects creates visibility, which is the source of inspiration and new ideas for improving previous projects or creating new projects. Without inspiration on the spot, on campus, in this situation, researchers and students have to look for inspiration somewhere else. Therefore, we see perfect use of the knowledge spiral in HEI for knowledge creation. Based on this model, a sustainability integration strategy combining academic and operation engagement can benefit the school by implementing sustainable improvements in the campus. The modifications can be related to cost savings, for example, solar panel installation, waste management, or projects related to society by developing integration programs. There are many other opportunities to use integration, and the more one uses it, the more potential inspiration can be generated, which supports knowledge creation.

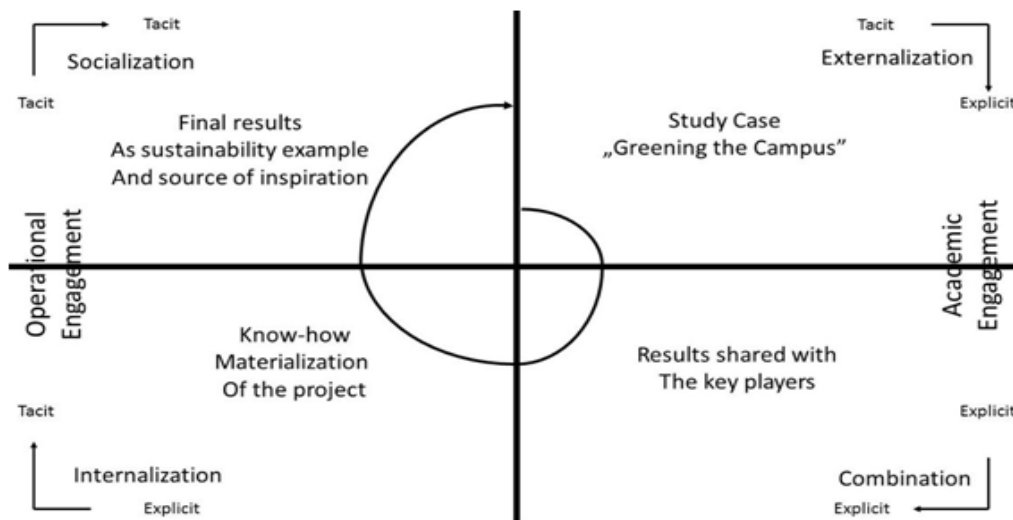


Figure 1: Sustainability integration strategies through SEIC model

5.1. Effectiveness of Strategies

The researchers of this thesis focus on the effectiveness of two strategies. The effectiveness was investigated based on three dimensions. All three dimensions were shown to be significantly different, based on the t-test. All three dimensions showed that higher sustainability involvement comes from students with a combination of academic and operational engagement. Therefore, we can conclude that the sustainability integration strategy that combines academic and operational engagement is more effective. This effectiveness can be seen in the sustainability perception. Still, the significant impact on effectiveness is in the current behavior of students, which makes them behave more sustainably and in CSR attitude. The effectiveness of combined

engagements can also affect knowledge creation by providing materialization of projects and ideas in reality and generating inspiration for potential new projects and ideas.

6. Conclusion

6.1. Summary of findings

This research compares sustainability implementation strategies and observes the effectiveness of strategy. Two approaches were identified and described by the researchers: a strategy involving academic engagement and a process involving academic and operational engagement. The comparison was conducted based on the survey responses from two selected schools that use the strategies mentioned above. In addition, the comparison was performed based on three dimensions, Sustainability Perception, Current Behavior, CSR Attitude.

The statistical test showed a difference in every dimension. Moreover, results showed that students from GOTBS, which implemented an educational and operational sustainability strategy have stronger sustainability perceptions, behave more sustainably, and have a more robust CSR attitude than students from JIBS, which implemented only an educational engagement sustainability strategy. Based on the results, it is clear that a sustainability strategy built on academic and operational engagement is more effective than a sustainability strategy built on educational engagement alone. The analysis showed that the additional effort of operational engagement helps students receive proper messages about the importance of sustainability from a theoretical perspective and practice. Schools play the role model in creating a sustainable environment that positively stimulates students' attitudes and helps overcome barriers to perceived behavior control. Obstacles to becoming more sustainable can be eliminated when students, in the practical assignment, can generate a project and implement it in the school environment. The support from the school also creates a safe environment to materialize the projects. Based on planned behavior theory, only teaching the importance of sustainability but not acting accordingly can send misleading signals and create confusion in students' attitudes, leading to intention and behavior. Therefore, an educational and operational engagement strategy makes a complete signal which can influence students to be more sustainable. Academic and operational engagement sustainability strategy can also benefit research and knowledge creation. Based on the SECI model, projects created by students and implemented real-life support the materialization of ideas and sustainability ideas. The circulation of knowledge based on the SECI model supports the expansion of knowledge in one's environment. In other words, ideas developed and implemented at the university can stimulate creativity and inspiration for new ideas and the continuation or improvement of previous ones. Engaging students to develop sustainable ideas on campus motivates other students to follow the same path.

6.2. Limitations

The sample was created based on the highest number of responses we received from the survey. During the research period, the final-year bachelor's students were working on their theses, creating difficulties in getting them. The initial idea was to meet students and distribute the survey in person. Unfortunately, students during this time were not accessible since they were not participating in lectures anymore. Due to this, the only channel to reach students was by email; therefore, an online survey was created and distributed. The online survey is not the most effective since the online channel was the only one available. We see this as a limitation to collecting a higher number of responses. Experts used for the preliminary interview were extremely busy, which put us in a brief discussion. This allowed us to receive only a broad view of the main topics. Because the interviews were conducted under time pressure, we could only ask the most crucial questions. The main limitation was time. The whole thesis was completed very intensively, focusing on collecting empirical findings. The data collection coincided with the Easter break, which was inconvenient for data collection. Since the online survey the online survey showed data collection, many reminders were needed to achieve the highest possible number of responses. With more time available, it is most likely that we would have been able to collect more responses and increase the size of the sample. Sustainability is a sensitive topic, and expressing an unsustainable point of view might be viewed negatively by general society. Therefore, despite the anonymous survey, some responses might be biased due to peer pressure.

6.3. Contribution

Our results have explored the effectiveness of strategies implemented for sustainability integration. Previous research has proved the effectiveness of each procedure on an individual level. However, none of the systems were compared with each other. We have tested the previous research through quantitative research. Our study increases the credibility of existing literature. Moreover, our research findings contribute to the understanding and managing global issues, particularly sustainability. Our results further add to the existing literature by establishing the additional value imparted by operational engagement to sustainability integration. Academic engagement and operational engagement complement each other. This can be seen and understood clearly in light of the theory of planned behavior and the SECI model for business students. Moreover, potential schools aiming to join the UN PRME initiative and implement a sustainability strategy can benefit from this thesis by choosing a more effective strategy. The distinction of dimensions and elaboration of dimensions allows schools to investigate which areas they need to improve in their strategy and which areas need more attention. Furthermore, this research study can assist organizations planning process for developing and preparing future business leaders by selecting appropriate sustainability integration strategies. At the same time, students aiming for more sustainable approaches at school can express their opinion about sustainability integration strategy based on the results of this research.

6.4. Practical Implications

Business schools, with the asset of students, should take advantage of fresh, open minds to improve their position in sustainability. This can be conducted by offering projects, assignments, and competitions about issues the school is dealing with, for example, decreasing the school's CO2 footprint. The important part is developing the idea, supporting it until the end, and implementing it at school. Such an action will help students gain know-how, allow the school to benefit from the sustainable improvement, and simultaneously provide a positive example of sustainability to the whole school community.

6.5. Future Research

This study focused on comparing educational engagement strategy and educational engagement combined with operational engagement strategy. An interesting observation was made during the research, which could be a good area for future research. Students from the school with only an educational engagement strategy responded to the specific question with a wide range of responses. This was observed only in the CSR attitude dimension and at the school with educational engagement. The other dimensions from the same school showed precise answers aiming for similar reactions in scale. Thus, there is no argument for a mistake in the survey questions. Similarly, the same dimension at the other school with both academic and operational engagement showed precise and similar responses; thus, there cannot be a mistake in the questions in this dimension. The general analysis didn't show any uniqueness. A close analysis of the responses indicated that students and the compared schools responded differently as a group. For example, for question 20 in the survey:

“Business has a social responsibility beyond making profits.”

Students from the school with academic and operational engagement strategies responded as agreeing or strongly agreeing. However, those responses were repetitive, with only a few neutral reactions. In the case of the school with academic engagement only, students gave all available answers. There was no pattern, and all possible solutions were given equally. This observation gained our attention, especially as it happened only with one dimension and only with the specific sustainability implementation strategy. Therefore, we assume there might be some relationship between sustainability implementation strategy and this dimension. We suggest this topic for further investigation to understand why students have a wide range of opinions about CSR attitudes under academic engagement.

Declaration of Interest Statement

The authors have declared no conflict of interest in the publication of this article.

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