The Impact of Enabling Employees to be Included in Company Processes on the Financial Performance of Servitizing Companies

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ABSTRACT

Purpose – Today more and more manufacturing companies decide to expand their traditional offering of products by providing customized services of different kinds. This process is called servitization and the role of employees plays a significant role in this transformation. By enabling employees to work in favor of the new strategy, companies can contribute to employees shifting their minds in a favorable way, which may ultimately lead to an increased financial performance.

Aim & Method – Referring to existing literature this paper investigates the impact that enabling employees to be included in company processes has on the financial performance of servitizing companies. To operationalize this measurement the correlation between the two independent variables (1) supportive learning environment and training and (2) integrating and informing employees about company strategies, and the dependent variable firms' percentage of revenue gained through services is investigated. This is done by a cross-sectional survey study with 55 manufacturing companies.

Results & Conclusion – A significant positive relationship between the second variable of this study, i.e. integrating and informing employees about company strategies, and the percentage of revenue gained through services (PeORTS) could be found. However, no relationship between the first variable, i.e. the supportive learning environment and training, and PeORTS was discovered.

Practical Implications – Companies thinking about or currently starting to innovate with services need to take into account the important role that employees play in this transformation process. Especially their integration into important strategies and keeping them up to date should be focus.

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Keywords

Servitization, Services, Manufacturing, Value-added, Challenges, Performance, Employees, Mindset Shift

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1. INTRODUCTION

In recent business the traditional view of strictly separating physical products from services becomes more and more outdated. Deregulation, technology, globalization as well as fierce competitive pressure make firms concentrate more and more on offering bundles of products and services consisting of various customer-focused combinations. Goods and services become more and more inseparable and are being offered together with a wide range of knowledge, support and self-service. Vandermerwe and Rada (1989) call this movement from focusing solely on selling physical products towards including various types of services into companies' business models "servitization". Other authors name this phenomenon "product-service systems" (Mont, 2002; Tukker & Tischner, 2006), "integrated solutions" (Davies, Brady & Hobday, 2007; Windahl, 2007), "service infusion" (Brax, 2005) and "tertiarization" (Leo & Philippe, 2001) as interchangeable terms (Lay et al., 2010).

Baines, Lightfoot, Benedettini and Kay (2009) identified an ever-growing interest in the phenomenon of servitization based on the belief that adding services to products will create additional value to the business of traditional manufacturers. These services offered need to be tailored for a company's customers, who may have very diverse and changing requirements and demands. Jacob and Ulaga (2008) confirm this claim by seeing services as an important growth area in the manufacturing sector. Servitization helps securing long-term growth and competitiveness in globalizing and constantly developing markets.

As already stressed by Zeithaml, Berry and Parasuraman in 1988, service quality depends to a large extent on the performance of a company's employees. Literature further agrees that service quality is related to benefits in profit and cost savings (Thompson, DeSouza & Gale, 1985; Rudie & Wansley, 1985; Zeithaml et al., 1988). This leads to the idea that employee performance is an important indicator of company profits. This paper aims at investigating the relationship between employees and a company's financial performance more closely.

2. ADVANTAGES OF SERVITIZATION

By differentiating their offerings, firms can elaborate a competitive manufacturing/service-led strategy with which they can on the one hand lock out competitors, and on the other lock in customers (Vandermerwe & Rada, 1989).

Several authors agree on the existence of different drivers for servitization, which are mainly financial-, strategic- and marketing-based (Baines et al., 2009; Petridis et al., 2014). Wise & Baumgartner (1999) as well as Gebauer, Fleisch and Friedli (2005) argue that firms especially shift towards the creation of service-based business models for financial reasons. They can expect higher profit margins as well as stabilization in income. Adding services to products, therefore, represents a very promising way to gain future business opportunities (Wise & Baumgartner, 1999).

By referring to strategic drivers like the building of competitive advantage strategies, Frambach, Wels-Lips and Gündlach (1997), Mathieu (2001) as well as Gebauer and Fleisch (2007) mention another advantage that firms can exploit. As services are hardly imitable by competitors and characterized as distinctive and long-lived, they provide a good basis for sustainable competitive advantage (Oliva & Kallenberg, 2003; Baines et al., 2009).

Next, firms can also benefit from a marketing-perspective. The use of services next to physical products is seen as a necessary move because it may attract (potential) customers and influence their purchasing decisions (Mathe & Shapiro, 1993; Gebauer, Friedli & Fleisch, 2006; Gebauer & Fleisch, 2007). If successful, customers will repeat their purchases and become dependent or even locked-in by the service-offering firm.

3. CHALLENGES ASSOCIATED WITH SERVITIZATION

Despite the benefits deriving from moving towards product-service systems, existing literature identifies a lot of challenges to overcome. The following sections will first of all identify the general challenges that servitizing companies may face. After that this paper will refer more closely to the challenges that were summarized by Neely (2009).

3.1 General Challenges

Lay et al. (2010) argue that although the majority of firms is already offering services to their products, they are not yet fully able to generate a satisfactory turnover with these services. Gebauer et al. (2005) call this phenomenon the "Service Paradox" (p.14). Manufacturing firms that invest heavily in adding services to their traditional business will on the one hand face the raising costs emerging from their increased offering, while on the other hand returns are not increasing as expected. They thereby fail to achieve the desired transition and fall into the "service paradox". Before being able to fully capture the desired financial impact on firm performance a company needs to adjust its skills, capabilities and competences to the new business model they are trying to adopt. Only then it is possible to overcome the negative impact that predominantly exists in the short run (Fang, Palmatier & Steenkamp, 2008).

In 1989, Vandermerwe and Rada already stressed that if companies want to provide services, they need to incorporate that into their overall strategy. Subsequent literature investigates this issue more closely. Munck (2001) as well as Baines et al. (2009) explain the importance of cultural and corporate changes that have to be made in order to integrate services into a company's existing offering. The most powerful way to change a company's culture and achieve the desired objectives is to convince people to change their way of thinking. By unionizing the workforce one can achieve loyalty and strong commitment from the side of the employees (Pfeffer, 2005). This observation is further elaborated by Weeks (2010) who adds the development of skills as an essential component that firms have to focus on. So, *changing employees' mindsets* becomes a major challenge that servitizing companies have to resolve in order to benefit from their strategy.

In their Servitization Conference in 2013, Nudurupati, Lascelles, Yip and Chan further stress the importance of building new people skills, as well as technologies and capabilities. After conducting a literature review on this issue, the authors came up with eight challenges that firms are facing when moving their strategy towards servitization. They suggest that changes have to be made on various perspectives including customer, culture, supplier and organizational architecture.

First, it is necessary to get an understanding of the different needs that customers have. This requires the development of specific tools, methods and techniques to get this information readily available (Morelli, 2009; Ulaga & Reinartz, 2011; Johnstone, Dainty & Wilkinson, 2009; Baines et al., 2009 & 2011; Ng & Nudurupati, 2010). Second, a cultural transition implying the learning of new skills and behaviors of employees is needed. Moreover, leadership and management styles have to

be adjusted and modified (Martinez et al., 2010; Johnstone et al., 2009; Baines et al., 2009 & 2011). Third, the way that the company interacts with the customer needs to be redefined. Cooperation with customers is in focus and risks and incentives are to be deployed (Spring & Araujo, 2009; Ulaga & Reinartz, 2011; Ng & Nudurupati, 2010). Fourth, a new strategy about how to price the offerings is required. Fifth, the design of the product and service system needs to be modified. Specific tools and techniques are to be adapted and capabilities and resources acquired (Morelli, 2009; Sakao, Sandstrom & Matzen, 2009; Ulaga & Reinartz, 2011; Martinez et al., 2010; Johnstone et al., 2009; Baines et al., 2009 & 2011; Ng & Nudurupati, 2010). Sixth, a new way of measuring performance has to be developed (Baines et al., 2009 & 2011). Seventh, some structural or infrastructural changes have to be made in the organizational architecture. The ways to capture and manage knowledge are to be defined (Sakao et al. 2009; Johnstone et al., 2009; Baines et al., 2009 & 2011; Ng & Nudurupati, 2010). And eighth, a new focus has to be placed on the supply network. Relationships with suppliers must be redefined and structured. Sometimes the need for vertical integration is observed (Spring & Araujo, 2009; Morelli, 2009; Martinez et al., 2010; Baines et al., 2009 & 2011; Bastl et al., 2012).

In summary it becomes obvious that there are various factors that are to be taken into account as challenges. Without overcoming or dealing with these challenges a company that decided to start servitizing will not be able to benefit from the mentioned advantages that the new strategy may offer.

3.2 Neely's Challenges of Servitization

Neely (2009) conducted a study on the financial consequences of servitization with 10,028 firms from different industries and countries. All of these companies were classified as manufacturing and about 32% already applied servitization strategies. Summarizing the information provided about the companies Neely was able to identify 12 different forms of services: "[1] design and development services; [2] systems and solutions; [3] retail and distribution services; [4] maintenance and support services; [5] installation and implementation services; [6] financial services; [7] property and real estate; [8] consulting services; [9] outsourcing and operating services; [10] procurement services; [11] leasing services; and [12] transportation and trucking services" (pp. 106-107). Next to that he found out that the larger the firm the more likely it is to servitize its offerings. Moreover, companies in highly developed economies are using servitization strategies more often than those in industrializing economies.

Using large-scale literature research plus anecdotal evidence from his study, Neely identified lots of explanations for the so-called "Service Paradox" as already explained before. He mentioned three broad categories of challenges with three to four factors each, which need to be taken into account and finally embedded into a whole service organization.

- Firstly, moving towards product-service systems requires the *shifting of mindsets*. This category can be split down into the factors marketing, sales and customers. Marketing needs to be changed from transactional to relational, which implies entering long-term contracts to change the relationship between supplier and customer. Next, the sales function needs to value the change from an expensive physical product towards selling service contracts and capabilities. Customers have to accept to not physically own the product, to which they might be emotionally attached, but to be happy with the service offered.
- The second category evolves around the challenge of *timescale*. It includes the management and delivery of multi-year partnerships. This is especially important for complex engineered services. Related to this, the second factor deals with managing and controlling the long-term risk and exposure of these multi-year partnerships. Moreover, cost and profitability implications of the partnerships have to be modelled and understood.
- The third category affects a company's *business model* and customer offering. It is divided into factors including customers, capabilities and culture. First of all, it has to be understood what value customers derive from the offering of services not producers or suppliers. Further, the capability to design and deliver services rather than products needs to be developed by the company and its employees. Third, a service culture has to be generated.

4. AIM & RESEARCH QUESTION

As mentioned previously there are a lot of challenges associated with servitization. Neely's summary of challenges (2009) includes the shift in mindsets that is necessary to occur in various departments, from marketing to sales. As hypothesized, this mindset shift may impact on the financial performance of servitizing companies. However, in order to make this shift possible, literature suggests some means to *enable employees to be included in company processes* as a necessary condition that must be met. This involves many different persons and employees that have to adjust their current way of working. Therefore, in order to operationalize the shifts mentioned by Neely, it is assumed that employees have to be enabled to work accordingly.

This paper aims at investigating the impact that enabling employees to be included in company processes (which is hypothesized to make employees shift their minds) has on the financial performance of servitizing companies. Therefore, the main research question can be formulated as follows:

To what extent does enabling employees to be included in company processes impact on the financial performance of servitizing companies?

In order to answer this question, sub-questions deriving from existing literature are to be formulated and analyzed in the following parts of this paper. These sub questions evolve around two categories of enabling employees, namely (1) giving them the (theoretical) know-how by support and training that they need in order to be included, and (2) empowering them by integration and informing them about company strategies.

An important success factor for servitization is the ability of employees and other stakeholders to perform in favour of the new strategy employed. The shift in mindsets, or the adoption of an "embedded product-service culture" (Martinez et al., 2010) requires adapting the qualifications of employees and empowering them to fulfil certain requirements of servitization (Gotsch et al., 2014). This is, however, sometimes a difficult task because, for example, talented engineers refuse to put focus on services but instead see their future in product engineering only. These engineers as well as other employees have to be convinced to change their minds about the issue of servitization.

Baines et al. (2013), for example, argue that with an increased offering of services, there will be a higher demand for interaction with customers. Therefore, so-called "front-office" operations dealing with product delivery and support services are becoming more important for the company and employees have to be trained in that way.

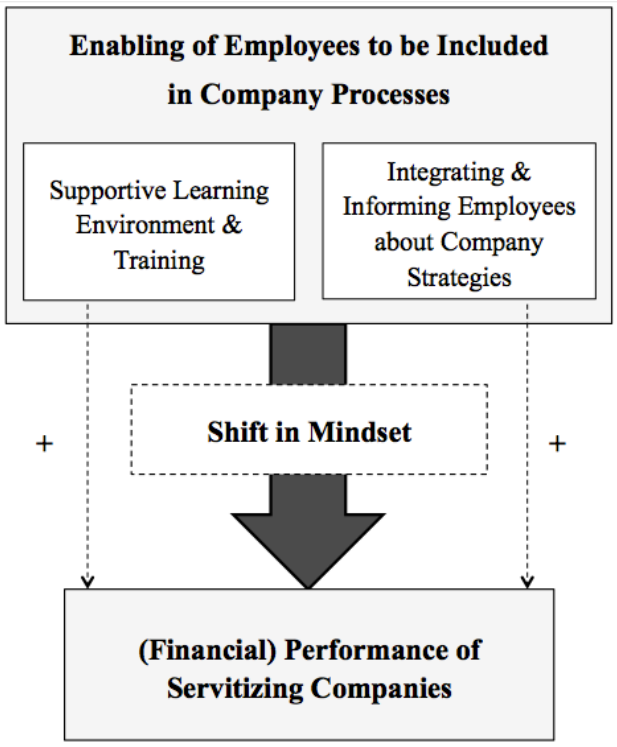

Figure 1. Visualization of relationship: Enabling employees to be included in company processes → Shift in mindset → Financial performance of servitizing companies

To make employees aware of the changes in operating that are required by the shift in strategy, training has to be performed. Training campaigns are offered to existing employees, while new staff that is already knowledgeable is recruited. Especially the managers have to be enabled in order to lead the company towards re-positioning (Raddats et al., 2014). Kaplan and Norton (2005) discuss the creation of an "office of strategy management". When firms engage in changing or adjusting their corporate strategy they must ensure to offer employee education, as well as training and orientation programs. Thereby, the strategy message from top management should be understood and internalized. Also compensations may influence an employee's effort towards the adoption of new (servitization) strategies.

The mentioned training campaigns will offer employees a deeper understanding of (1) the importance of service quality, (2) the skills required, (3) the firm's products and how to tailor them to customers, and (4) the overall goals and objectives of the new strategy (Schneider et al., 2003). The authors show the interdependence of continuous learning with other organizational practices like teamwork, open communication, goals and rewards. A positive relationship of an effective reward and performance management system on organizational performance has found consistency in literature. Several successful companies show superior customer service by establishing employee reward systems.

Summarizing, literature stresses the importance of enabling employees to work in a favourable way towards the new servitization strategy. This is done by learning and mutual support. Closely related is the flow of information within a company and between employees and managers. Employees need to be convinced about the role that they play in the whole service innovation process. Resistance and opportunistic behaviour can, therefore, be managed by empowering and keeping responsible employees up to date (Gotsch et al., 2014).

In order to answer the main research question as stated above, the following two sub-questions about (1) the (theoretical) know-how by support and training, and (2) the active empowerment by integration and information, are to be answered:

SQ 1. *To what extent does the creation of a supportive learning environment and training have an impact on the financial performance of a servitizing company?*

SQ 2. *To what extent does informing and integrating employees into company strategies have an impact on the financial performance of a servitizing company?*

It is expected that enabling employees to be included in company processes and its two components, i.e. the supportive learning environment and training, and integrating and informing employees about company strategies are positively related to the financial performance of servitizing companies. Two hypotheses can be formulated to test this relationship:

H1. A supportive learning environment and employee training is positively related to the financial performance of servitizing companies.

H2. Integrating and informing employees about company strategies is positively related to the financial performance of servitizing companies.

The mentioned relationships are visualized in Figure 1.

4.1 Academic Relevance

The majority of existing management literature agrees that servitizing offers advantageous opportunities for manufacturing companies (inter alia Oliva and Kallenberg, 2003; Weeks 2010). Literature is, however, still sparse in investigating manufacturing companies' transition from product- to service-based offerings (Jacob & Ulaga, 2008), particularly when it comes to the extent to which services should be integrated into existing offerings. Especially the challenges associated with the transition from pure product offerings towards product-service systems are to be examined more closely.

Moreover, Nudurupati et al. (2013) mention several weaknesses of extant literature. The authors particularly criticize that the majority of executed studies are conceptual and not yet investigated practically. The few empirical studies found are often only related to single case studies and a limited number of answers given. Therefore, results are hardly generalizable across different organizations and industries. Various research streams are to be pulled together with greater industry participation.

Neely (2009) himself suggests future research in order to investigate the extent to which the challenges mentioned in his paper "explain the paradox of servitization" (p.115).

4.2 Practical Relevance

Vandermerwe and Rada (1989) already stressed the difficulty of integrating services sufficiently into a company's corporate analysis and strategy design. Lay et al. (2010) add that the majority of servitizing companies still generates very little turnover from their new offering. Firms tend to overestimate the profits they are able to make with servitization and already fail in early adoption phases (Neely, 2009).

Before being able to gain from moving towards servitization there are several challenges to be managed (Neely, Benedettini

& Visnjic, 2011). Fang et al. (2008) refer to firm's failure to gain significant financial returns while Gebauer et al. (2005) focus on the cultural and organizational shifts, which not seldom make companies fail to capitalize on the opportunities offered by services.

5. RESEARCH METHOD

5.1 Survey Construction

In order to answer the two sub-questions and ultimately the main research question as formulated in part 3, questions are to be formulated to ask servitizing companies about their current attitude and way of working.

For this paper we cooperated with the Service Science Factory (SSF), which is part of Maastricht University. The SSF constructed a catalogue of related questions, which were used for helping companies to get a better insight into their current situation and to uncover weaknesses to build up strengths. These questions were categorized into the following categories: (1) Supportive & Learning Environment, (2) Service Oriented Questions, (3) Specific Service Innovation Projects, (4) The Team, (5) Customer Relationship, and (6) Market Research Methods. For this paper the right subset of questions relating to the main research question were chosen from these categories.

In order to operationalize the dependent variable, i.e. the financial performance of servitizing companies, a question about the percentage of total revenue that originates from the provision of services was asked. A higher percentage of revenue gained through services may indicate the success or failure of the new servitization business model. Additionally, a question about the self-assessment of the current servitization performance was asked to the responsible manager who had to choose on a 5-answer scale from "very unsuccessful" to "very successful".

Concerning the first sub-question, i.e. the supportive learning environment and training, eight questions about the mentioned training programs and possibilities were asked. Thereby, collaboration, group meetings, enabling systems and dealing with failure were important issues to focus on. Further, employee qualifications and commitment were to be investigated and the hours spent on training front line employees to be examined.

For the second sub-question of this paper, another eight questions about integrating and informing employees about the company strategies were asked. This includes the formulation and communication of clearly defined goals to the responsible personnel. Moreover, the degree to which there is urgency of service innovation within the organization and top management was asked to the responsible manager. Lastly, the awareness of employees about the services offered and its benefits was an important issue to examine.

For these 16 questions companies were asked to make a choice from a 7-answer scale, where 1 indicates "strongly disagree" and 7 means "strongly agree". This implies that it was asked for the observations that were being made by the responsible person filling out the questionnaire. The whole questionnaire with additional information on the 16 questions can be found as 10.1 in the Appendix.

In order to assess the internal consistency of the different questions within the two categories, a reliability analysis was conducted via SPSS. For the first variable, i.e. supportive learning environment and training, Cronbach's Alpha of 0.75 shows an "acceptable" to "good" (George & Mallery, 2003) correlation between the different questions asked. For the second variable, i.e. integrating and informing employees about the company's strategies, an even higher internal consistency of the eight questions could be found with Cronbach's Alpha of 0.91. According to Geory and Mallery (2003) this represents an "excellent" correlation. In total all questions fit together very well and can be used for further analyses in the upcoming sections.

Next to the set of questions about the dependent and independent variables, possible moderators were to be identified and assessed. For this study companies were asked a multi-answer question about what they perceive as the basis for their success in servitization. In the following sections the companies' overall "focus on employees" as basis for success is assessed as a moderating variable.

Interviews were conducted with several manufacturing companies in the province of Limburg (NL). All of these firms recently started to innovate with services to complement their offering for their customers. Further, companies from different manufacturing branches were investigated independently from the Service Science Factory. Information was gathered in form of interviews as well as qualitative and quantitative surveys covering self-assessment and financial questions.

5.2 Data Collection

To examine the relationship between enabling employees to be included in company processes and the companies' financial performance more closely this study analyzes data from a sample of 42 companies. In total 55 companies participated in this research. Since this paper investigates the mentioned relationship in *manufacturing* companies, seven pure service-providing companies were left out of the analysis. Further, six firms from non-manufacturing industries were not taken into account, either.

Companies taking part in this research were mainly chosen by personal contacts and relationships. The responsible employees answering the survey were mostly CEO or upper management level (18 persons), or holding a leading position in different departments (11). Other responses were given by responsible service, sales or marketing managers. Therefore, estimates and responses given can be seen as professional and realistic.

As a first step, the answers to the 16 questions about the two independent variable categories (supportive learning environment and training, and integrating and informing employees about company strategies) were summed up for each company on each category. This implies a possible maximum score of 56 (8 questions x 7) to be gained for each category if all questions were answered with "strongly agree" and a possible minimum score of 8 (8 questions x 1) if all questions were answered with "strongly disagree".

5.3 Data Analysis

The data for this study was gathered with the help of the databases Qualtrics and Survey Monkey. This allows an easy transfer of the data to SPSS Statistics, which is a software developed by the IBM Corporation to execute statistical analyses. In SPSS there are a lot of different functions useful for the analysis of the retrieved data. First of all this paper will give an overview of the company sample that took part in this research. Information about the sample and company size, their classification into different industry branches and other details will be provided. Further, the values for the 16 questions about the two categories of the independent variable are summed up and the corresponding minima, maxima, means and standard deviations of the participating companies calculated. Next, the correlation between the two categories and the dependent variable, i.e. percentage of revenue gained through services, is calculated and evaluated. Lastly, a regression analysis is perfor-

Table 1. Sums of independent variable survey questions

		N	Minimum	Maximum	Mean	Standard Deviation
Total	Learning Env. & Training	35	32	55	44.8	6.17
	Integration & Information	38	13	56	41.89	9.34
***With* Focus on Employees**	Learning Env. & Training	29	32	55	44.62	6.64
	Integration & Information	31	13	56	41.55	10.18
***Without* Focus on Employees**	Learning Env. & Training	6	40	49	45.67	3.27
	Integration & Information	7	40	51	43.43	3.99

med using Hayes' Conditional Process Analysis, which is a macro for SPSS that investigates moderated mediation of variables (Hayes, 2013). It will be examined whether the correlation is moderated by the companies' overall focus on employees.

6. RESULTS

6.1 Descriptives

The 42 companies that took part in this study indicated to operate in nine different industry branches (mechanical and plant engineering (15 companies), metal processing (11), food production (3), building industry (3), vehicle construction (2), electrical engineering (2), printing and packaging products (2), energy and water supply and disposal products (1), and other productions or constructions (3)). Also the size of the companies surveyed ranged from small (<50 employees), medium (50-250) and large (>250) with 17, 8 and 15 companies respectively.

Moreover, of all these companies 33 (78.6%) indicated to see the focus on employees as part of the basis of their servitization success. Only 9 companies declared other factors like investments, top management, customers, etc. as more important than employees when identifying their basis of success in servitization.

Therefore, the data for the two new training and integration variables as calculated in 5.2 was split up for those indicating to focus on employees and those who did not see employees as the basis of success. The means and standard deviations were calculated for those companies with and without focus on employees respectively. The results are presented in table 1.

What becomes obvious is that on average companies indicated higher scores for the eight questions about the supportive learning environment and training, irrespectively of whether they focus on employees or not. So, on average in the sample surveyed training seems to be more focused on than integration and information activities. For the second category, integrating and informing employees about company strategies, answers varied to a larger extent. This can be seen in the higher standard deviations, especially for those companies that indicated to focus on employees. This shows that some companies are placing much more focus on integration and information of employees than others do. However, the mean for all of the categories is higher than 40, which implies that on average all companies have answered all questions with a "somewhat agree" or "agree".

For simplicity reasons, from this part onwards the two new variables, i.e. the summed up values for the supportive learning environment and training, and those for the integration and informing employees about company strategies category, will be referred to as "training" and "integration and information" respectively.

6.2 Correlation

As a next step, a correlation between the two independent variables, training and integration and information, and the dependent variable, percentage of revenue through services (PeORTS), was calculated via SPSS. The results can be found in table 2. In the following the presented results are analyzed with the help of De Veau, Velleman and Bock's book "Stats: Data and Models" (2011).

Training is not statistically correlated to the percentage of revenue gained through services (Pearson's $r = .30$; $p = .08$). This means that how a company increases the training for its employees is not associated with higher or lower earnings by services.

On the other side, the second variable, integration and information, is statistically positively correlated to PeORTS (Pearson's $r = .45$; $p < .05$). This means that if employees are more closely integrated and better informed about what is currently going on in the company, the firm can expect to gain more revenue by the provision of services. A scatterplot to show the relationship between the two variables can be found in figure 2.

Concluding, only the second independent variable, namely integration and information, shows a significant positive correlation with the dependent variable, i.e. percentage of revenue gained through services. Therefore, an increase (decrease) in integration and information will ultimately lead to an increase (decrease) in revenue gained by services.

Table 2. Correlation matrix (Training, Integration & Information, PeORTS)

		1.	2.	3.
1. PeORTS	Pearson Correlation		.3	.454**
2. Training	Pearson Correlation			.75**
3. Integration & Information	Pearson Correlation			

**. Correlation is significant at the .01 level (2-tailed).

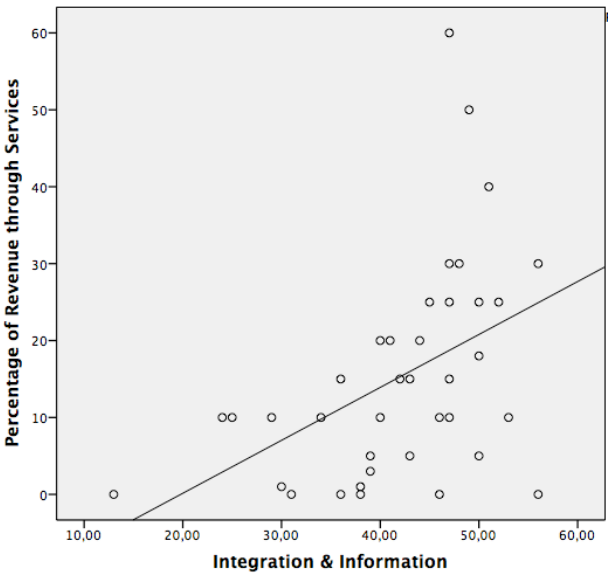

Figure 2. Scatterplot for correlation Integration & Information and PeORTS

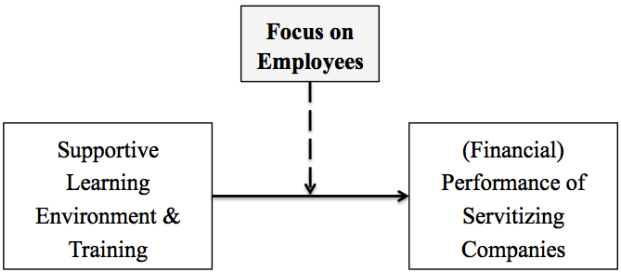

Figure 3. The moderating effect of the companies' focus on employees on the relationship (Indep. 1 → Dep.).

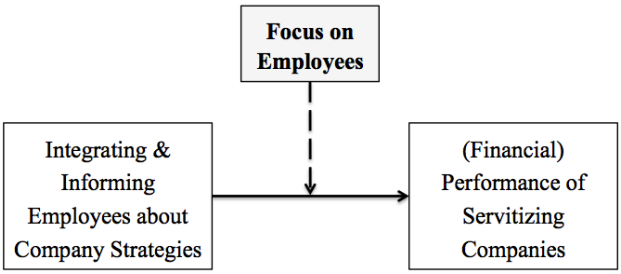

Figure 4. The moderating effect of the companies' focus on employees on the relationship (Indep. 2 → Dep.).

6.3 Regression Analysis

The regression analysis was conducted via the Conditional Process Macro for SPSS developed by Andrew F. Hayes (2013). Hayes provides different types of model templates that show the moderating effect of a variable M on the relationship between an independent variable X and a dependent variable Y.

For the relationships presented in this paper model 1 was used. This moderating effect is visualized in figure 3 and 4.

Using Hayes' Process Macro in SPSS, the coefficients, standard errors and a 95% confidence interval were calculated. Two independents and their interaction term were entered into the model. The whole report and method can be found in the Appendix (10.2 SPSS PROCESS Hayes' Regression Analysis).

For the variable "supportive learning environment and training", the analysis shows no significant moderating effect of the companies' focus on employees. The model was found to be not statistically significant ($F(3; 31) = 1.16$; $p = .66$). Therefore, neither main effects nor interaction effects were further investigated. The result of the analysis is summarized in table 3.

A different result was achieved with the second independent variable of this study, i.e. integrating and informing employees about company strategies. The model was found to be statistically significant ($F(3; 34) = 3.42$; $p < .05$), therefore it was investigated whether main effects or moderating effects were present.

There is a statistically significant main effect of integration and information on the dependent variable PeORTS ($B = 0.85$; $SE_B = 0.31$; 95% CI = [0.21; 1.47]; $p < .05$), denoting that a positive value of integration & information is associated with an increase in the percentage of revenue gained through services.

However, no main effect of the company's overall focus on employees on PeORTS could be found ($B = -2.09$; $SE_B = 5.79$; 95% CI = [-13.85; 9.66]; $p = .72$). This implies that the focus on employees does not influence the percentage of revenue that is gained through services. Further, no moderating effects of this variable on the positive relationship that was found between integration & information and PeORTS could be identified ($B = -1.1$; $SE_B = 1.34$; 95% CI = [-3.83; 1.63]; $p = .42$). The detailed results are shown in table 4.

Summarizing the analyses conducted so far, one can conclude that there is no significant relationship between the first independent variable, i.e. training, and the dependent variable, i.e. percentage of revenue gained through services. For the second variable, i.e. integration and information, however, a significant positive relationship with the dependent variable was found. Therefore, a (positive/negative) change in the degree of integration and information is also associated with a (positive/negative) change in the amount of PeORTS. This relationship is not moderated by the companies' overall focus on employees.

7. CONCLUSION

7.1 Hypotheses (De)validation

The conducted analyses of the previous sections provide some useful results in order to answer the two sub questions and ultimately the main research question of this paper:

SQ 1. *To what extent does the creation of a supportive learning environment and training have an impact on the financial performance of a servitizing company?*

SQ 2. *To what extent does informing and integrating employees into company strategies have an impact on the financial performance of a servitizing company?*

RQ. *To what extent does enabling employees to be included in company processes impact on the financial performance of servitizing companies?*

As concluded with the correlation and regression analyses no significant relationship between the supportive learning environment and training and the percentage of revenue gained

Table 3. Hayes' Process Regression Matrix for the moderating effect of the companies' focus on employees on the relationship Training → PeORTS

	B	SE_B	t	p	95% Confidence Interval	
a) Focus on Employees	-3.01	6.68	6.36	.66	-16.61	10.6
b) Learning Env. & Training	0.77	0.48	1.61	.12	-0.21	1.75
a) x b) Interaction term	-0.62	2.01	-0.31	.76	-4.72	3.48

Table 4. Hayes' Process Regression Matrix for the moderating effect of the companies' focus on employees on the relationship Integration & Information → PeORTS

	B	SE_B	t	p	95% Confidence Interval	
a) Focus on Employees	-2.09	5.79	-0.36	.71	-13.85	9.66
b) Integration & Information	0.85	0.31	2.74	.01	0.22	1.47
a) x b) Interaction term	-1.1	1.34	-0.82	.42	-3.83	1.63

through services could be found. However, for the second variable, i.e. integrating and informing employees about company strategies, a significant positive relationship was found with the data given. Furthermore, this relationship is not influenced by a company's overall focus on employees as a moderating variable. This leads to the (de)validation of the two hypotheses as formulated previously.

H1. No significant relationship between a supportive learning environment and employee training and the financial performance of servitizing companies could be found.

H2. A significant positive relationship between integrating and informing employees about company strategies and the financial performance of servitizing companies could be found.

The main research question can be answered that enabling employees to be included in company processes done by integration and information plays an important role when trying to increase the revenue gained through services. However, supportive learning environment and training does not. This shows that the active involvement seems to be more important than providing (theoretical) know how.

7.2 Recommendations

7.2.1 Reflections on Literature and Data analyzed

As the analyses show, integrating and informing employees more about company strategies will lead to higher revenues through services. This finding allows the formulation of recommendations for companies that are thinking about or currently developing service innovations. In this section these recommendations are adapted to other findings and suggestions from literature. In the next section examples of some of the companies that were interviewed during this research are presented to show the important role that employees play in the process of servitization.

Gotsch et al. (2014) already mentioned that informing employees and keeping them up to date is an important task for companies. Thereby, mutual understanding among employees as well as successfully unionizing the workforce may enhance the perceived service quality of a company (Kyoon Yoo & Ah Park, 2007; Pfeffer, 2005). Let's recall the phenomenon of the so-called "Service Paradox" (Gebauer et al., 2005) from section 2.2.1, which implies that although manufacturing firms might be investing heavily in the development and offering of services they cannot yet benefit from increased returns as expected. Since this study shows a significant positive relationship between integrating and informing employees and revenue from services, the Service Paradox might be solved or overcome to some extent by paying more attention towards integrating and informing employees involved.

Further, the challenge of shift in mindset, as indicated by Neely (2009), may be simplified in the same way. If employees are more closely integrated and better informed about what is going on, they are more likely to perform better when it comes to shifting marketing from transactional to relational, and sales from products only to bundles of products and services.

7.2.2 Reflections on Qualitative Data

The importance of integration and the provision of information to employees is further confirmed by some of the companies participating in the study of this paper.

One firm, which is working in the metal processing industry, indicated that initial resistance of the employees to change their accustomed way of working when starting to servitize was handled by clear explanations and communication among employees. By actively including them in discussions with the customer, they ultimately recognized their role in the whole process. Further, they understood what they are doing and what it is good for. This allows the employees to "work at a higher level".

Another company, which is offering products of sheet metal in all kinds of forms, stressed the importance of close mutual interaction between personnel. Employees have to recognize that they have to work flexibly and be able to perform different tasks simultaneously. Moreover, they are informed and integrated in customers' wants and needs so that in case of questions and concerns they are directly able to solve these problems and help them. Each employee in this company is responsible for the communication and explanation of situations

to other employees, so that reciprocal exchange of information is enabled. By doing this, employees can actively be part of the customer and not only be the supplier that simply delivers products.

A third firm, which is constructing customized machines for food processing, even goes further and sees a proud and dedicated team as vital for servitization success. Every employee is proud to be working for this company particularly. Recruitment is never done on a salary basis but the focus is always placed on this proud factor. Instead of doing things exclusively with the head or mind in a rational way, heart and emotions play an important role. Conversations and constant feedback lead employees to becoming more and more part of the whole sales process. The turnover generated by this strategy allowed the company to increase hiring staff by 25%.

Summarizing, the quantitative and qualitative data received and analyzed leads to the proposition that integrating and informing employees about company strategies is a very important task that is very likely to ultimately lead to servitization success, especially in financial terms. Companies thinking about or currently starting to innovate with services should therefore keep in mind the importance of integrating employees into the whole servitization process and keeping them up to date.

Although no significant relationship has been found between a supportive learning environment and the revenue gained through services directly, literature identifies training as an important step in the servitization process. Training increases the performance of employees by making them aware of the job specifications and skills they need to successfully perform their job. Knowing what is expected from them will also increase their motivation, attitude and behaviour towards achieving personal and organizational goals (Khan, 2012).

7.3 Contribution to Theory & Practice

This study adds to existing theory by contributing to Neely's research about "exploring the financial consequences of the servitization of manufacturing" (2009). This paper tests the impact of enabling employees to be integrated in company processes on the financial performance of manufacturing companies. It, moreover, validates the various literatures emphasizing the importance that employees play in the process of servitization.

Contribution to practice can be seen as the recommendations made for manufacturing companies to focus on their employees and their corresponding roles when servitizing. As literature suggests, employee performance determines the extent of the quality of services, which in turn leads to benefits in profits and cost savings. This study reveals that especially efforts towards integrating and informing employees about what is currently going on in the company are advisable to be made. The workforce should be unionized and mutual understanding and interaction encouraged. Examples of some of the servitizing companies interviewed were shown in section 7.2.2 (reflections on qualitative data) and can be used as an example or model for other companies that want to become more successful in their service offerings.

7.4 Limitations

This paper faces some limitations. The relationship between the independent variable, i.e. enabling employees to be integrated in company processes, and the dependent variable, i.e. the financial performance of servitizing companies, is investigated. Retrieved from literature, enabling employees to be integrated in company processes can be said to be comprised of (1) a supportive learning environment and training for employees and (2) integrating & informing employees about company strategies. Next to these two categories there might, however, be other categories that make employees change their minds. Compensation and remuneration for good work and behavior might be one of these additional categories.

Further, as already mentioned by Neely (2009) there are two other set of challenges that may impact on the (financial) performance of a company, namely the timescale and the change in a company's business model.

Another limitation of this paper is the fact that the study is based on the data of 55 companies only, which reduces the power of the result of this research. To widen the scope and make the results more powerful and reliable, answers from more companies might be needed.

7.5 Future Research

Based on the positive relationship found, the best ways and means to integrate employees should be investigated further. Integrating employees more efficiently will be one of the bases of increasing financial performance. This should also be investigated with special respect to the "Service Paradox". To what extent can the Service Paradox be dealt with by integration and information?

Also the first variable of this paper, i.e. the supportive learning environment and training, should be examined more closely. Which types of training could be beneficial for the financial performance of servitizing companies? This allows research in more than one dimension. Best practices should be investigated more closely.

Another direction for future research is the examination of other factors that may be included in the variable shift in mindset Future research should investigate the importance of other categories as compensation and remuneration.

Moreover, the other two challenges as mentioned by Neely (2009) also need to be tackled in order to get a complete picture on the impact that the several challenges together have on firms' performances.

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10. APPENDIX

10.1 Survey

In order to get the data necessary for the analyses conducted, a survey was distributed among the participating firms. These were addressed not only via the Service Science Factory in Maastricht but also via Mail and personal contacts.

For the sixth question of the survey presented below, i.e. the question about the independent variables, questions 1-3 and 5-9 belong to the first variable (supportive learning environment and training), while questions 4 and 10-16 belong to the second one (integrating and informing employees about company strategies).

Name of the Organization:
(only for orientation reasons; the data will be analyzed anonymously)

2. My company places its focus on:

- Products
- Services
- A combination of Products and Services

3. How big is your company?

- Small (< 50 employees)
- Medium (50-250 employees)
- Large (> 250 employees)

4. What is your position in the company?

5. What branch does your company work in?

- Advertising, Marketing, PR
- Aerospace
- Banking
- Chemical Industry
- Construction
- Consulting, Auditing, Law
- Consumer & Commodity Goods
- Education & Training
- Electrical Engineering & Optics
- Energy & Water Supply & Disposal
- Financial Services
- Food and Related Products
- Glas & Ceramics
- Government Service & Associations
- Health & Social Services
- Hotel, Restaurant & Catering
- Insurance
- IT & Internet
- Machinery & Plants
- Media
- Medical Engineering
- Metal Industry
- Mining
- Personnel Services
- Pharmaceutical Industry
- Printing, Paper & Packaging
- Property & Housing
- Recreation, Tourism, Culture & Sports
- Science & Research
- Telecommunications
- Textiles & Clothing
- Transportation & Logistics
- Vehicle Manufacturing & Distribution
- Wholesale & Retail
- Wood & Furniture Industry
- Other

6. In my Organization…

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree	Not applicable
1. There is an atmosphere of collaboration	❍	❍	❍	❍	❍	❍	❍	❍
2. Your organization has a supportive working environment.	❍	❍	❍	❍	❍	❍	❍	❍
3. Group meetings have a constructive character.	❍	❍	❍	❍	❍	❍	❍	❍
4. There is a system in place which facilitates the possibility for employees to share their new service ideas or suggestions.	❍	❍	❍	❍	❍	❍	❍	❍
5. On average, there is a high commitment among employees to explore new ideas.	❍	❍	❍	❍	❍	❍	❍	❍
6. Failure is seen as a learning experience.	❍	❍	❍	❍	❍	❍	❍	❍
7. Employees involved in developing Service Innovations are well qualified for the tasks.	❍	❍	❍	❍	❍	❍	❍	❍
8. Sufficient number of hours is spent on training of front line employees.	❍	❍	❍	❍	❍	❍	❍	❍
9. The effectiveness of frontline employee training is assessed.	❍	❍	❍	❍	❍	❍	❍	❍
10. Front-line employees (those employees who make direct contact with customers) are involved in the Service Innovation development process.	❍	❍	❍	❍	❍	❍	❍	❍
11. Your organization's strategy includes a clearly defined service goal.	❍	❍	❍	❍	❍	❍	❍	❍
12. Service offerings are clearly communicated to the employees.	❍	❍	❍	❍	❍	❍	❍	❍
13. There is a sense of service innovation urgency within the whole organization.	❍	❍	❍	❍	❍	❍	❍	❍
14. There is a sense of service innovation urgency within Top Management.	❍	❍	❍	❍	❍	❍	❍	❍
15. Employees are aware of the potential benefits of service innovations.	❍	❍	❍	❍	❍	❍	❍	❍
16. There is a high level of awareness among employees about new services which are currently being developed.	❍	❍	❍	❍	❍	❍	❍	❍

7. How would you rate your organization's overall success in service innovation?

	Very unsuccessful (1)	Unsuccessful (2)	Neither successful nor successful (3)	Successful (4)	Very successful (5)	I really don't know (6)
	❍	❍	❍	❍	❍	❍

8. What do you see as the basis for this success in your company?

Multiple choices possible

- ☐ Investments
- ☐ Employees
- ☐ Top Management
- ☐ Collaboration with other companies
- ☐ Competition
- ☐ Wishes of the customer
- ☐ Close collaboration with the customer
- ☐ Other (please specify)

*** 9. How much percent of your revenues is generated by services?**

10.2 SPSS Syntax

```
RELIABILITY
  /VARIABLES=SOM_1 SOM_2 SOM_3 SOM_4 SOM_5 SOM_6 SOM_7 SOM_8 SOM_9 SOM_10 SOM_11 SOM_12 SOM_13
    SOM_14 SOM_15 SOM_16
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
RELIABILITY
  /VARIABLES=SOM_1 SOM_2 SOM_3 SOM_5 SOM_6 SOM_7 SOM_8 SOM_9
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
RELIABILITY
  /VARIABLES=SOM_4 SOM_10 SOM_11 SOM_12 SOM_13 SOM_14 SOM_15 SOM_16
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

```
COMPUTE Training =SOM_1+SOM_2+SOM_3+SOM_5+SOM_6+SOM_7+SOM_8+SOM_9.
EXECUTE.
COMPUTE IntegrationInfo = SOM_4+SOM_10+SOM_11+SOM_12+SOM_13+SOM_14+SOM_15+SOM_16.
EXECUTE.
```

```
DESCRIPTIVES VARIABLES=Training IntegrationInfo
  /STATISTICS=MEAN STDDEV MIN MAX.
SORT CASES  BY FocusEmployees.
SPLIT FILE SEPARATE BY FocusEmployees.
DESCRIPTIVES VARIABLES=Training IntegrationInfo
  /STATISTICS=MEAN STDDEV MIN MAX.
SPLIT FILE OFF.
```

```
CORRELATIONS
  /VARIABLES=PEoRTS Training IntegrationInfo
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

```
FREQUENCIES
 /VARIABLES=Industrybranch FocusEmployees PositionEmployee CompanySize
```

10.3 SPSS PROCESS Hayes' Regression Analysis

Via SPSS a Regression Analysis was conducted using the Macro developed by Andrew Hayes. This Macro is available for download via the following Homepage: http://www.afhayes.com/spss-sas-and-mplus-macros-and-code.html

For the "Independent Variable (X)" the corresponding variables, training and integration & information, were chosen. As the "Outcome Variable (Y)" the variable PeORTS was selected. The "Focus on Employees" was inserted as the "M Variable", i.e. the moderating variable. With the help of Hayes' template for models, Model No. 1 was chosen to investigate the effect of X → Y, M → Y and the moderating effect of M on X → Y. The Confidence Interval was set at 95%. As additional options the "Mean center for products" and "OLS/ML confidence intervals" were selected.

The final reports for both independent variables can be seen in the following:

10.3.1 Report Supportive Learning Environment and Training

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.03 *****************

        Written by Andrew F. Hayes, Ph.D.   http://www.afhayes.com

**************************************************************************
Model = 1
    Y = PEoRTS
    X = Training
    M = FocusEmp

Sample size
         35

**************************************************************************
Outcome: PEoRTS

Model Summary
          R       R-sq          F        df1        df2          p
      ,3178      ,1010     1,1612     3,0000    31,0000      ,3403

Model
             coeff         se          t          p       LLCI       ULCI
constant   15,5654     2,4488     6,3562      ,0000    10,5708    20,5599
FocusEmp   -3,0063     6,6714     -,4506      ,6554   -16,6129    10,6004
Training      ,7694      ,4784     1,6081      ,1179     -,2064     1,7451
int_1        -,6178     2,0110     -,3072      ,7607    -4,7194     3,4838

Interactions:

 int_1    Training    X     FocusEmp

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      ,0027      ,0944     1,0000    31,0000      ,7607

**************************************************************************

Conditional effect of X on Y at values of the moderator(s)
   FocusEmp     Effect         se          t          p       LLCI       ULCI
     -,8286     1,2813     1,9690      ,6507      ,5200    -2,7346     5,2971
      ,1714      ,6634      ,4092     1,6213      ,1151     -,1711     1,4980

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.

****************** ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95,00

NOTE: The following variables were mean centered prior to analysis:
 Training FocusEmp

NOTE: Some cases were deleted due to missing data.  The number of such cases was:
  7

------ END MATRIX -----
```

10.3.2 Report Integrating and Informing Employees about Company Strategies

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Release 2.03 *****************

        Written by Andrew F. Hayes, Ph.D.   http://www.afhayes.com

**************************************************************************
Model = 1
    Y = PEoRTS
    X = Integrat
    M = FocusEmp

Sample size
         38

**************************************************************************
Outcome: PEoRTS

Model Summary
          R       R-sq          F        df1        df2          p
      ,4814      ,2318     3,4195     3,0000    34,0000      ,0281

Model
              coeff         se          t          p       LLCI       ULCI
constant    14,8988     2,1342     6,9808      ,0000    10,5614    19,2361
FocusEmp    -2,0943     5,7860     -,3620      ,7196   -13,8531     9,6646
Integrat      ,8461      ,3087     2,7409      ,0097      ,2188     1,4735
int_1       -1,1034     1,3435     -,8213      ,4172    -3,8339     1,6270

Interactions:

 int_1    Integrat     X      FocusEmp

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      ,0152      ,6745     1,0000    34,0000      ,4172

**************************************************************************

Conditional effect of X on Y at values of the moderator(s)
   FocusEmp     Effect         se          t          p       LLCI       ULCI
     -,8158     1,7463     1,3233     1,3196      ,1958     -,9431     4,4356
      ,1842      ,6429      ,2322     2,7690      ,0090      ,1710     1,1147

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.

******************* ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95,00

NOTE: The following variables were mean centered prior to analysis:
 Integrat FocusEmp

NOTE: Some cases were deleted due to missing data.  The number of such cases was:
  4

------ END MATRIX -----
```