

## **Service-Dominant Orientation: Empirical Measurement Model Considerations**

**Ingo O. Karpen, PhD\***  
Lecturer in Marketing,  
RMIT University,  
Building 108, Level 12, 239 Bourke Street,  
Victoria 3000, Australia  
Tel: +61 39925 5877  
Email: [ingo.karpen@rmit.edu.au](mailto:ingo.karpen@rmit.edu.au)

**Liliana L. Bove, PhD**  
Associate Professor in Marketing,  
The University of Melbourne,  
09.025, Level 9, 198 Berkeley Street,  
Victoria 3010, Australia,  
Tel: +61 39035 5512  
Email: [lbove@unimelb.edu.au](mailto:lbove@unimelb.edu.au)

\*Please address all correspondence to this author.

Paper presented at the 2011 Naples Forum on Service: Service-Dominant Logic,  
Networks and Systems Theory, Service Science

Capri, June 14 – 17, 2011

# **Service-Dominant Orientation: Empirical Measurement Model Considerations**

## ***ABSTRACT***

**Paper type** – Research paper

**Purpose** – Conceptualized as a value co-creation capability, a firm's service-dominant orientation has been operationalized as a hierarchical index. This paper seeks to investigate this measurement model by studying nomological relationships of the six constituent components of a service-dominant orientation, namely relational, ethical, individuated, concerted, empowered, and developmental interaction.

**Methodology/approach** – A firm's service-dominant orientation has been modeled and studied recently as a higher-order formative construct. One important condition supporting such a measurement approach is that the forming components are not required to share the same antecedents and consequences. Taking a quantitative research approach, matched data were collected from Australian car dealership managers and their respective customers. Two potential organizational drivers (service vision and service rewards) and five customer related outcomes (positive word-of-mouth, satisfaction, and perceived trust, value and quality) were examined in relation to each of the six service-dominant orientation components.

**Findings** – This study confirmed that the six components of a service-dominant orientation have differing nomological relationships. For example, service vision has a significant positive effect on concerted, individuated, empowered and developmental interaction, but not ethical and relational interaction. In contrast, employee service reward was only significantly associated with relational and individuated interaction. A similar impact variation can be observed between the six service-dominant orientation components and the specified customer outcomes. For instance, while developmental interaction does not significantly contribute to customer trust, ethical and concerted interaction do. Ultimately, all components of a service-dominant orientation demonstrate significant positive effects on at least one of the customer metrics.

**Research implications** – In addition to measurement model discourse, empirical evidence supports a formative higher-order model specification as a reflective perspective requires all components to have the same antecedents and consequences. More research is now needed to consider a broader set of potential antecedent constructs and contingencies.

**Practical implications** – This research demonstrates that each component of a service-dominant orientation has managerial relevance in the specified nomological context and deserves strategic consideration. Further, the results highlight the extent to which each of the two considered antecedents facilitate the implementation of a service-dominant orientation.

**Originality/value** – This paper advances empirical examinations of service-dominant logic. That is, antecedents and consequences of the proposed service-dominant orientation components are explored in view of an appropriate measurement model specification.

**Key words** (max 5) – **Service-dominant orientation, value co-creation capability**

# **Service-Dominant Orientation: Empirical Measurement Model Considerations**

## **Introduction**

In recent years researchers in marketing and management have increasingly emphasized the importance of construct validity and related measurement issues (see e.g. Diamantopoulos and Winklhofer 2001; Edwards 2001; Jarvis et al. 2003; Law et al. 1998; Mowen and Voss 2008). In particular, the issue of measurement model specification in terms of formative and reflective approaches has stimulated significant academic debate. The question of measurement appropriateness becomes even more complex, yet relevant in the development of hierarchical constructs. For example, Jarvis et al. (2003) classify four different types of second-order construct specifications. Meanwhile, Wetzels et al. (2009) demonstrate the usefulness of partial least squares structural equation modeling (PLS-SEM) in estimating such multi-order (multi-level) constructs. In parallel to the increasing consideration of formative measurement models in the marketing and management literature, PLS-SEM becomes a frequently applied alternative to the traditional covariance-based structural equation modeling (CB-SEM) approach (Henseler et al. 2009). Researchers are thus encouraged to make an informed choice regarding measurement model specification and estimation in the context of both new and established constructs.

Karpen et al. (2009) have recently introduced the concept of a service-dominant orientation (S-D orientation). Defined as an organizational capability portfolio, the S-D orientation represents a hierarchical construct constituted by six interaction capabilities that facilitate and enhance the co-creation of meaningful experiences. As such, the authors

propose a Type II value co-creation construct, characterized by reflective first-order and formative second-order measurement specifications. A conceptual reasoning for this approach is provided based on the decision criteria proposed by (Jarvis et al. 2003). While the selection of a measurement model should be theoretically driven (Diamantopoulos and Siguaw 2006), it is meaningful to empirically explore and validate the underlying assumptions. The purpose of this paper is thus to shed empirical light on the specification proposed by Karpen et al. (2009). In doing so, we focus on the nomological network criterion put forth by Jarvis et al. (2003) and empirically investigate potential drivers and outcomes of the six S-D orientation components. As a result, this study enables researchers to make a more informed evaluation of the proposed S-D orientation measurement model while providing insights of potential drivers and outcomes. Using matched (dyadic) data, managerial perceptions of a firm's service vision and service-based reward system (service rewards) are considered as drivers of S-D orientation, while customer trust, satisfaction, positive word-of-mouth and perceived quality and value are studied as outcomes.

The remainder of this paper is structured as follows. We first review the S-D orientation construct and provide a measurement model discourse for the higher-order modeling level. Next, we specify a structural model including potential antecedents and consequences of the S-D orientation components. We then present the method and results of our study and discuss the implications for managers and potential avenues for future research.

## **The S-D Orientation Concept**

The S-D orientation construct translates S-D logic thinking into respective behaviors, enabled by underlying interaction capabilities that facilitate the co-creation of valuable experience. As such, the S-D orientation draws upon key S-D logic themes relevant for value co-creation. These include: *value-in-context* (Vargo and Lusch 2004; Vargo and Lusch 2008), *relationships* (Ballantyne and Varey 2006; Jaworski and Kohli 2006), *values* (Abela and Murphy 2008; Williams and Aitken in press), *co-production* (Kalaiganam and Varadarajan 2006; Lusch et al. 2007), *operant resources* (Lusch et al. 2006; Vargo and Lusch 2004) and *service process flows* (Duncan and Moriarty 2006; Lambert and García-Dastugue 2006).

Drawing on relevant S-D logic and strategy literature and in consultation with international ‘S-D logic academic experts’ six service-driving interaction capabilities were identified and refined which are grounded in above mentioned themes. These are labeled and defined as follows: (1) individuated interaction (II)—understanding individual customers’ service processes, contexts, and desires; (2) relational interaction (RI)—supporting the connection of social and emotional links with service customers; (3) ethical interaction (EI)—supporting fair and non-opportunistic customer service; (4) empowered interaction (EMI)—enabling customers to shape the nature and content of service; (5) developmental interaction (DI)—supporting customers’ own knowledge and competence development in service processes; and (6) concerted interaction (CI)—supporting coordinated and integrated service processes including customers. In summary, the S-D orientation is defined as a *portfolio of organizational capabilities that facilitate and enhance the reciprocal integration of resources through individuated, relational, ethical, developmental, empowered, and concerted interaction*. Essentially, the S-D orientation represents a set of operant resources that help customers and other value network partners to achieve greater value-in-context through the

respective interaction and resource integration processes. As such, the proposed S-D orientation lends itself to the interpretation as a higher-order strategic capability, constituted by six lower-order interaction capabilities.

### **Conceptual Measurement and Structural Model Reasoning**

The selection of a measurement model is primarily a conceptual choice that should be theoretically driven and relate to the conceptualization of the construct (Diamantopoulos and Siguaw 2006). In recent years, the dominance of reflective measurement approaches has been questioned, while formative measurement models and techniques have been advanced (see, e.g., Diamantopoulos et al. 2008; Diamantopoulos and Winklhofer 2001; Jarvis et al. 2003; Rossiter 2002; Wetzels et al. 2009). Whilst reflective models in general still represent an acceptable choice in many cases, *any* measure development effort should encompass a careful discussion about the appropriate measurement perspective. As multiple studies have demonstrated, model misspecification can influence statistical results, which may lead to questionable conclusions (see, e.g., Collier and Bienstock 2009; Diamantopoulos and Siguaw 2006; MacKenzie et al. 2005). According to the classification by Jarvis et al. (2003), Karpen et al. (2009) propose a Type II construct, consisting of a reflective first-order and formative second-order specification. An extended conceptual reasoning will be outlined in the following while concentrating on the higher-order level as the focal point of measurement model debate. The discussion will be guided by the four decision criteria regarding model specification introduced by Jarvis et al. (2003): Direction of causality; interchangeability; covariation; and nomological network.

### *Direction of Causality*

In line with recent guidelines for construct definitions (see Mowen and Voss 2008), six components are proposed and included in the conceptualization of the S-D orientation that enable empirical testing of the dimensionality hypotheses. Thereby, the S-D orientation represents a higher-order construct as an overall abstraction of its six components. This is theoretically meaningful and provides, for example, the advantage of parsimony as a representation of the various facets (Edwards 2001; Law et al. 1998). However, it is critical in the context of a hierarchical construct to specify the relationship with its components (Law et al. 1998; Mowen and Voss 2008). That is, researchers need to consider the direction of causality between the lower- and higher-order constructs, whereby the former function as indicators of the latter in a hierarchical model.

In the case of the S-D orientation, the six interaction capabilities are the defining characteristics of the construct. In this composite or aggregate view analogous to a formative measurement model (Diamantopoulos and Winklhofer 2001; Jarvis et al. 2003; Law et al. 1998), the six components determine the meaning of and constitute the abstract multifaceted index. In fact, the six capability constructs are seen as causal as opposed to effect indicators, each contributing to and capable of changing the magnitude of the higher-order S-D construct independently. For example, a company might strategically prioritize and continuously improve any of the six interaction capabilities, which in turn results in a greater overall S-D orientation (*ceteris paribus*). We thus view the six lower-order capabilities as independent, distinct, and combinatory contributors to the higher-order S-D competency<sup>1</sup>.

---

<sup>1</sup> The term capability and competency is here use interchangeably (see Madhavaram and Hunt 2008)

### *Interchangeability*

Jarvis et al. (2003) consider the issue of indicator interchangeability as another decision criterion for the measurement model specification. In the context of the S-D orientation, it has been proposed that the six interaction capabilities address unique content that cannot be substituted or compensated for (Karpen et al. 2009). Consequently, none of the six components alone can adequately represent the overall S-D orientation (see Law et al. 1998). Thus the deletion of one of the six competencies would alter the domain of the higher-order S-D construct, while being inconsistent with the conceptual understanding thereof. For instance, the ethical and empowered interaction capabilities are seen to enable and be manifested in substantially different organizational service behaviors, addressing different theoretically relevant content. The six components are thus seen to be not interchangeable in line with a formative modeling approach.

### *Covariation*

Even though the components may covary in the same direction simultaneously, this is not necessarily the case in every context. Covariation of indicators is entirely consistent with formative modeling, yet it is not required (Diamantopoulos and Winklhofer 2001; Jarvis et al. 2003). From a strategic perspective however, covariation might be desired to increase the potential impact of a holistic S-D orientation. For example, if a firm excels in each of the six S-D orientation capabilities relative to competitors, it is expected that the firm would be able to build a stronger brand preference and market position. However, given potential trade-offs between the capabilities, firms may choose to prioritize investments in a few, while achieving a minimum hurdle for the others. Spending too much time with individual customers (individuated interaction), for example, could interfere with efficient and cost-effective service flows, negatively impacting the experiences of other customers. Hence, although

covariation is entirely possible, organizations may strategically prioritize certain capability investments over others and thereby foster a skewed S-D orientation configuration, fitting the individual organizational context. This characteristic of the S-D orientation is again in line with a formative measurement model.

### *Nomological Network*

The final decision rule offered by Jarvis et al. (2003) relates to the nomological network and whether the indicators have the same antecedents and consequences. In the case of the S-D orientation, it has been suggested that the six interaction capabilities do not necessarily have the same antecedents or outcomes. For example, while it is plausible that ethical interaction has a positive impact on customers' organizational trust perception, a similar impact is more difficult to assume for developmental interaction (Karpen et al. 2009). Similarly, while service rewards is likely to motivate service personnel to provide individual attention to customers (individuated and relational interaction), this is may have little bearing on ethical or developmental interaction. Ethical interaction may be stimulated more by the recruitment of service personnel with shared organizational values and additional values-oriented employee training, whereas developmental interaction is likely to benefit from the availability of leading technology. Thus the potentially differing antecedents and consequences of the S-D orientation components would argue for a formative specification.

Based on the theoretical support given for the operationalization of the S-D orientation we now empirically investigate how far the components of the S-D orientation indeed converge or diverge with respect to a set of drivers and outcomes.

In terms of antecedents we consider two strategically important variables that facilitate service-driven organizational behaviors: service vision and service rewards. Service vision has been argued to be the major “[...] driving force that enables the organization to deliver quality service in the marketplace” (Lytle et al. 1998, p. 641). As such, a clear service vision provides organizational members with motivation and guidance for appropriate service activities and emphasizes service-oriented investments. A stronger service vision is thus expected to foster the development of service-driving capabilities and in turn enable service-driven actions. Employee reward systems have also been shown to play a significant role in the context of an organization’s desired service performance (Homburg et al. 2003). Compensations systems that reward employee service behaviors are likely to facilitate organizational behaviors associated with an S-D orientation. In terms of potential outcomes, Karpen et al. (2009) have shown a positive impact of the higher-order S-D orientation on customer trust, satisfaction, and positive word-of-mouth. These variables also represent meaningful variables to explore the potential direct impact of the six S-D orientation components given their central role in indicating meaningful customer experiences. Additionally, we here consider two more constructs: customer perceived quality and value. Both customer metrics are frequently used as indicators of successful marketing outcomes (see e.g. Hartline and Ferrell 1996; Keh and Sun 2008).

## **Methodology**

### *Data Collection and Sample*

In order to investigate antecedents and consequences simultaneously, as well as reduce common method bias, data was collected from both customers and managers. The study was conducted in the Australian automotive retail context. Due to its long-established

goods-dominant focus yet high co-creation potential, this industry represents a suitable context for the study. Traditionally, the automotive industry is based on firm-driven mass production with a relatively strong push approach from manufacturers through to the retail network. Not surprising given this downwards pressure, car salespeople at the front-line are often criticized for using manipulative sales tactics. Indeed over decades in the US market the role of a car salesperson has been perceived as the least ethical profession (Stevens 2004). However, the automotive industry is undergoing substantial changes. For instance, automotive manufacturers and their channel partners such as Mercedes have begun to establish experience-centric retail environments in view of better purchase processes and co-constructed outcomes (Payne et al. 2008). The automotive retail context thus offers a unique opportunity for studying varying levels of service-dominant efforts, drivers, and outcomes.

The customer data was first gathered in cooperation with an Australian online panel provider. Panel members qualified for participation if they purchased their new or used vehicle at an authorized Australian dealership. They also were required to have had their car serviced at least once at the dealership within the past 12 months. These screening criteria ensured that customers had sufficient experience with multiple contact points of the car dealership (e.g. sales and service center) within a timeframe that reduces recall bias. The online survey was pre-tested and carefully designed using a number of sections that appeared as consecutive web pages. Before progressing to the new page, every question had to be answered. However, participants were able to leave the survey at any time and finish the questionnaire at a later stage. In total, 412 usable questionnaires were completed.

On the basis of this customer sample (n=412) matched firm-based data was collected. To identify customers' car dealerships, each respondent was asked to name the dealership and

specify its location. These dealerships were then contacted by telephone. Depending on their willingness and availability to participate, interviews with either the dealership principal or a financial officer were scheduled. This procedure ensured that only organizational members were interviewed who were knowledgeable enough and qualified to respond to organizational aspects such as performance. 276 different firms were represented across Australia. Over a five week period 105 usable matched cases were collected. In cases where multiple customers assessed the same dealership, their responses were averaged (see Ramani and Kumar 2008). A test for non-response bias found no significant differences between early and late responses indicating that non-response bias does not appear to be a concern (Armstrong and Overton 1977).

#### *Measures and Analysis Approach*

The antecedent and outcome variables were adapted from existing scales to fit the car dealership context. Customer satisfaction was captured by a three item scale and positive word-of-mouth by a five item instrument both adapted from Gremler and Gwinner (2000). To assess customers' perceived value, a six-item instrument based on Keh and Sun (2008) and Ruiz et al. (2008) was used. Overall quality perceptions were gauged through a two-item measure analogous to Taylor (1997). Perceptions of trust were investigated through an instrument used by Kingshott and Pecotich (2007). The six component S-D orientation measure was taken from Karpen et al. (2009). Service vision was captured by a three item scale from Lytle et al. (1998), while the measure of service rewards stems from Homburg et al. (2003) and both these antecedent measures were assessed by the car dealership informant.

SmartPLS version 2 (Ringle et al. 2005), a software that allows for PLS-SEM modeling, was used to analyze the data for the two main reasons. First, PLS-SEM is

appropriate if the goal is identifying key antecedent constructs in an exploratory theoretical context rather than purely testing theory (Hair et al. 2011). In this case we aim to investigate drivers of the S-D orientation components while studying in turn their own driving capacity in the nomological network. Second, the sample size of 105 dyads is relatively small compared to the number of parameters to be estimated, which renders PLS-SEM a more suitable approach compared to CB-SEM (Chin and Newsted 1999). In order to estimate the significance of the path coefficients, 5000 bootstrap samples were generated (Hair et al. 2011).

The outcome relationships were analyzed using the full 412 cases dataset as both the S-D orientation of the car dealership as well as the five outcome variables were assessed from the customers' perspective. The smaller sample of 105 dyadic cases was used to examine the antecedent relationships as the driver variables were assessed by the car dealership manager whilst the dealership's S-D orientation was assessed by the customer.

## **Analysis and Results**

### *The Measurement Model*

Before analyzing the structural model, the measurement properties of all constructs were first assessed. As PLS-SEM does not offer fit statistics comparable to CB-SEM, the measurement models were rigorously evaluated based on quality criteria such as item reliabilities in combination with construct-related factors such as convergent and discriminant validity (e.g., Martin and Johnson 2010; Reimann et al. 2010). During the process of measure purification, one service reward item, one trust item and two perceived value items were deleted due to poor convergent validity, with all items finally loading above 0.70. Tables 1 and 2 present the characteristics for all measures in the nomological network based on the

respective dataset. Composite reliabilities and Cronbach alphas are above 0.70 and all average variances extracted (AVE) are above 0.50 (diagonal) as an indicator of convergent validity. In order to ensure discriminant validity among the constructs, the Fornell and Larcker (1981) criterion was applied. The squared construct correlations (below the diagonal) are accordingly smaller than the associated AVEs.

**Table 1 Discriminant Validity and Measure Quality Analyses (n=105)**

n=105	CI	DI	EI	EMI	II	RI	Rewards	Vision	Cronbachs Alpha	Composite Reliability
<b>CI</b>	<b>0.790</b>								0.912	0.938
<b>DI</b>	0.614	<b>0.809</b>							0.922	0.944
<b>EI</b>	0.243	0.314	<b>0.838</b>						0.937	0.954
<b>EMI</b>	0.513	0.545	0.235	<b>0.746</b>					0.893	0.921
<b>II</b>	0.444	0.457	0.462	0.486	<b>0.871</b>				0.951	0.964
<b>RI</b>	0.311	0.228	0.283	0.316	0.462	<b>0.838</b>			0.936	0.954
<b>Rewards</b>	0.066	0.066	0.030	0.068	0.150	0.131	<b>0.711</b>		0.799	0.880
<b>Vision</b>	0.123	0.092	0.043	0.107	0.153	0.112	0.370	<b>0.746</b>	0.830	0.898

Thus, all constructs in this study comply with commonly used quality criteria ensuring construct validity and adequate measurement models respectively (see Hair et al. 2011).

**Table 2 Discriminant Validity and Measure Quality Analysis (n=412)**

n=412	CI	DI	EI	EMI	II	RI	PValue	Quality	Satisfaction	Trust	WoM	Cronbachs Alpha	Composite Reliability
CI	<b>0.791</b>											0.912	0.938
DI	0.613	<b>0.811</b>										0.922	0.945
EI	0.242	0.317	<b>0.841</b>									0.937	0.955
EMI	0.500	0.544	0.220	<b>0.755</b>								0.893	0.925
II	0.440	0.461	0.451	0.484	<b>0.871</b>							0.951	0.964
RI	0.309	0.231	0.299	0.307	0.472	<b>0.838</b>						0.936	0.954
PValue	0.381	0.332	0.173	0.299	0.379	0.309	<b>0.790</b>					0.911	0.938
Quality	0.544	0.449	0.255	0.386	0.391	0.408	0.459	<b>0.923</b>				0.916	0.960
Satisfaction	0.416	0.373	0.155	0.437	0.400	0.278	0.517	0.393	<b>0.904</b>			0.947	0.966
Trust	0.502	0.403	0.373	0.397	0.486	0.300	0.447	0.452	0.564	<b>0.859</b>		0.967	0.973
WoM	0.343	0.297	0.122	0.392	0.295	0.377	0.481	0.399	0.526	0.402	<b>0.886</b>	0.968	0.975

*The Structural Model*

Having assessed the quality of the measurement models of the individual constructs, we next evaluate the nomological relationships. Table 3 summarizes the path coefficients between service vision and service rewards (bold figures), the t-values thereof (below bold figures), and the percentage of variance explained ( $R^2$ ). In a combined model (examining service vision and rewards simultaneously), service vision shows to be a significant driver of concerted, developmental, empowered, and relational interaction. In contrast, a service rewards is only significantly associated with individuated and relational interaction. Neither service vision nor service rewards are significantly associated with ethical interaction.

**Table 3 Relationships between Potential Antecedents and S-D Orientation Components**

(n=105)	<b>S-D Orientation Components</b>					
<b>Antecedents</b>	CI	DI	EI	EMI	II	RI
Service Vision	<b>0.310**</b> 2.682	<b>0.231*</b> 1.998	<b>0.164</b> 1.331	<b>0.269**</b> 2.593	<b>0.246*</b> 2.448	<b>0.181</b> 1.786
Service Rewards	<b>0.068</b> 0.750	<b>0.117</b> 1.111	<b>0.073</b> 0.811	<b>0.097</b> 1.190	<b>0.238*</b> 2.008	<b>0.252*</b> 2.057
$R^2$	0.13	0.10	0.05	0.11	0.19	0.15

\*=significant at the .05 level, \*\* significant at the .01 level

Similarly varied results can be observed on the outcome side. As Table 4 illustrates only three of the six S-D components namely, empowered, individuated, and relational interaction have a positive impact on customers' favorable word-of-mouth behavior. Further, empowered and individuated in addition to concerted and ethical interaction are positively associated with both customer satisfaction and trust. In terms of perceived value, empowered, individuated, concerted and developmental interaction are significant drivers. Finally, customers' quality perceptions are primarily shaped by empowered, concerted, ethical, and relational interaction. With the exception of positive word-of-mouth, at least four of the six S-D orientation components function in each case as significant drivers of the customer performance metrics.

The poorest performing S-D orientation component was developmental interaction which was only positively associated with perceived value.

**Table 4 Relationships Between the S-D Orientation Components and Potential Consequences**

(n=412)	<b>S-D Orientation Components</b>						
<b>Consequences</b>	CI	DI	EI	EMI	II	RI	R <sup>2</sup>
+Word-of-mouth	<b>0.067</b>	<b>0.049</b>	<b>-0.008</b>	<b>0.213**</b>	<b>0.259**</b>	<b>0.155*</b>	0.42
	1.245	0.969	0.269	3.298	3.098	2.554	
Satisfaction	<b>0.184**</b>	<b>0.069</b>	<b>0.124*</b>	<b>0.183*</b>	<b>0.245*</b>	<b>0.123</b>	0.63
	3.051	1.298	2.532	3.388	3.378	1.985	
Trust	<b>0.280***</b>	<b>0.049</b>	<b>0.257***</b>	<b>0.135*</b>	<b>0.219**</b>	<b>-0.016</b>	0.63
	4.354	0.983	5.686	2.768	3.089	0.531	
Perceived Value	<b>0.151*</b>	<b>0.147*</b>	<b>0.079</b>	<b>0.196**</b>	<b>0.203**</b>	<b>0.102</b>	0.57
	2.329	2.155	1.721	3.206	2.611	1.789	
Quality	<b>0.331***</b>	<b>0.131</b>	<b>0.107*</b>	<b>0.112*</b>	<b>0.057</b>	<b>0.179**</b>	0.61
	5.190	1.959	2.212	2.047	1.061	2.821	

\*=significant at the .05 level, \*\*=significant at the .01 level, \*\*\*= significant at the .001 level

## Discussion and Conclusion

Recently Karpen et al. (2009) introduced the S-D orientation construct. Specified as an organization's portfolio of six interaction capabilities that facilitate resource integration and value co-creation, the hierarchical construct had been modeled in a Type II format; that is, combining reflective measures at the lower-level and formative indicators at the upper-level (Jarvis et al. 2003). In this manuscript we have extended the conceptual reasoning and have provided empirical evidence supporting such a formative higher-order specification. Thereby, causality is seen to flow from its components to the superordinate S-D orientation as the latter increases with advanced subordinate service skills. While addressing different theoretical content, the six S-D orientation components have been reasoned not to be interchangeable. Covariation is further not necessarily the case as companies may invest in a subset of S-D capabilities, for instance, due to potential trade-offs or organizational priorities. In terms of the nomological network, this study empirically supports the notion of a composite model as both antecedents and consequences differ among the S-D components.

On a side note, the S-D orientation index exists in fact only as an artificially created and summed aggregate of its components from an ontological perspective. That is, although managers or customers might have intuitive or global associations with the term “service orientation”, given the limited discussions on S-D logic outside academia, one cannot expect managers or customers to think of the proposed six components at this stage. Hence, the S-D orientation is a synthetically formed index and does not exist per se, which is again in line with a formative approach (see, e.g., Coltman et al. 2008; Rossiter 2002) and adds to the decision criteria proposed by Jarvis et al. (2003).

The empirical results demonstrate that each of the S-D orientation components plays a significant role in achieving market success. That is, all interaction capabilities contribute to at least one of the five specified customer based performance metrics. Therefore the challenge for managers is to find a meaningful balance between effectiveness and efficiency while executing all six components. This study further highlights that in particular concerted and individuated interaction are important drivers of four of the five considered customer outcomes in an Australian automotive context. Typically, car dealership customers interact with various interfaces across sales and service departments at various stages of their relationship lifecycle. Hence, seamless process flows through well integrated and organized touch points as well as in-depth understandings of individual customers at various points in time assist car dealerships in building meaningful customer experiences and relations. Although commonly perceived as a less ethical context (see Stevens 2004), car dealerships’ demonstrated ethical interaction capabilities have significant pay-offs in terms of customer satisfaction, trust, and perceived quality. In comparison, relational and developmental interactions are less significant in the context of this study, which may in the latter case, for instance, refer to pre-informed and relatively knowledgeable customers who often spend a

significant amount of time researching alternatives on the internet before visiting a car dealership (Andres 2006). Overall, if managers are using customer based performance metrics, neglecting any of the six S-D components will be sub-optimal. Understanding the impact of the S-D components in-depth can thus guide the configuration of organizational resources for desirable service outcomes.

Although service vision and service rewards assist with emphasizing and prioritizing service behaviors, there are likely to be other variables of interest that explain variance in the S-D orientation components. For example, the level of service training and a service-driven culture may be alternatives that future research could investigate. In particular culture with its reference to underlying values and norms may positively relate to ethical interaction skills. Researchers could further study the nomological network of the S-D orientation in different contexts. For example, it is plausible that the direct impact of the S-D facets on customer outcomes may vary in different settings as car dealership customers may value certain service behaviors or S-D components differently to bank customers or bakery customers. As such, bank customers may particularly appreciate developmental interaction (which was less important in this study) to better understand the complexity of certain investment solutions or financing alternatives and ultimately make optimal choices. This, however, may be less important for bakery customers again. Future research may also empirically investigate the proposed reflective modeling approach at the lower-order level (items to S-D components), as this study concentrated on the higher-order perspective (components to overall S-D construct). For instance, the application of a vanishing tetrad test seems to be a promising tool to confirm or disconfirm the reflective modeling approach for the first-order components (Bollen et al. 2009; Wilson et al. 2007).

Conceptualized as a value co-creation capability, a firm's service-dominant orientation has been operationalized as a hierarchical index. This paper has provided additional conceptual and exploratory empirical support for such a measurement approach. Furthermore, this manuscript has enriched our understanding of potential antecedents and consequences regarding the constituent components of an S-D orientation. While the S-D orientation demonstrates a significant impact on customer outcomes, more research is needed that addresses firm outcomes in view of achieving competitive advantage.

## References

- Abela, Andrew V. and Patrick E. Murphy (2008), "Marketing with Integrity: Ethics and the Service-Dominant Logic for Marketing," *Journal of the Academy of Marketing Science*, 36 (1), 39-53.
- Andres, Marc-Stefan (2006), "Die Optimale Varianz," *brand eins* (1), 64-69.
- Armstrong, J. S. and R.S. Overton (1977), "Estimating Nonresponse Bias in Mail Surveys," *Journal of Marketing Research*, 14 (3), 396-402.
- Ballantyne, David and Richard J. Varey (2006), "Introducing Dialogical Orientation to the Service-Dominant Logic of Marketing," in *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions*, Robert F. Lusch and Stephen L. Vargo, eds. Armonk: M. E. Sharpe.
- Bollen, Kenneth A., Richard D. Lennox, and Darren L. Dahly (2009), "Practical Application of the Vanishing Tetrad Test for Causal Indicator Measurement Models: An Example from Health-related Quality of Life," *Statistics in Medicine*, 28 (10), 1524-36.
- Chin, Wynne W. and Peter R. Newsted (1999), "Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares," in *Statistical Strategies for Small Sample Research*, Rick Hoyle, ed. Thousand Oaks, CA: Sage Publications.
- Collier, Joel E. and Carol C. Bienstock (2009), "Model Misspecification: Contrasting Formative and Reflective Indicators for a Model of E-Service Quality," *Journal of Marketing Theory and Practice*, 17 (3), 283-93.
- Coltman, Tim, Timothy M. Devinney, David F. Midgley, and Sunial Venaik (2008), "Formative Versus Reflective Measurement Models: Two Applications of Formative Measurement," *Journal of Business Research*, 61 (12), 1250-62.
- Diamantopoulos, Adamantios, Petra Riefler, and Katharina P. Roth (2008), "Advancing Formative Measurement Models," *Journal of Business Research*, 61 (12), 1203-18.
- Diamantopoulos, Adamantios and Judy A. Siguaw (2006), "Formative Versus Reflective Indicators in Organizational Measure Development: A Comparison and Empirical Illustration," *British Journal of Management*, 17 (4), 263-82.
- Diamantopoulos, Adamantios and Heidi M. Winklhofer (2001), "Index Construction with Formative Indicators: An Alternative to Scale Development," *Journal of Marketing Research*, 38 (2), 269-77.
- Duncan, Tom and Sandra Moriarty (2006), "How Integrated Marketing Communication's "Touchpoints" Can Operationalize the Service-Dominant Logic," in *The Service-Dominant Logic of Marketing: Dialog, Debate, And Directions*, Robert F. Lusch and Stephen L. Vargo, eds. Armonk: M. E. Sharpe.

Edwards, Jeffrey R. (2001), "Multidimensional Constructs in Organizational Behavior Research: An Integrative Analytical Framework," *Organizational Research Methods*, 4 (2), 144-92.

Fornell, C. and D. F. Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics," *Journal of Marketing Research*, 18 (1), 39-50.

Gremler, Dwayne D. and Kevin P. Gwinner (2000), "Customer-Employee Rapport in Service Relationships," *Journal of Service Research*, 3 (1), 82-104.

Hair, Joe F., Christian M. Ringle, and Marko Sarstedt (2011), "PLS-SEM: Indeed a Silver Bullet," *Journal of Marketing Theory & Practice*, 19 (2), 139-52.

Hartline, Michael D. and O. C. Ferrell (1996), "The Management of Customer-Contact Service Employees: An Empirical Investigation," *Journal of Marketing*, 60 (October), 52-70.

Henseler, Jörg, Christian M. Ringle, and Rudolf R. Sinkovics (2009), "The Use of Partial Least Squares Path Modeling in International Marketing," *Advances in International Marketing*, 20 (277-319).

Homburg, Christian, Martin Fassnacht, and Christof Guenther (2003), "The Role of Soft Factors in Implementing a Service-Oriented Strategy in Industrial Marketing Companies," *Journal of Business-to-Business Marketing*, 10 (2), 23-48.

Jarvis, C. B., S. B. MacKenzie, and P. M. Podsakoff (2003), "A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research," *Journal of Consumer Research*, 30 (2), 199-218.

Jaworski, Bernard J. and Ajay K. Kohli (2006), "Co-Creating the Voice of the Customer," in *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions*, Robert F. Lusch and Stephen L. Vargo, eds. Armonk: M. E. Sharpe.

Kalaiganam, Kartik and Rajan Varadarajan (2006), "Customers as Co-Producers: Implications for Marketing Strategy Effectiveness and Marketing Operations Efficiency," in *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions*, Robert F. Lusch and Stephen L. Vargo, eds. Armonk: M. E. Sharpe.

Karpen, Ingo O., Liliana L. Bove, and Bryan A. Lukas (2009), "Empirically Investigating Service-Dominant Logic: Developing and Validating a Service-Dominant Orientation Measure," in *Proceedings of the Australian and New Zealand Marketing Academy Conference*. Melbourne, Australia, 30 November - 2 December.

Keh, Hean Tat and Jin Sun (2008), "The Complexities of Perceived Risk in Cross-Cultural Services Marketing," *Journal of International Marketing*, 16 (1), 120-46.

Kingshott, Russel P.J. and Anthony Pecotich (2007), "The Impact of Psychological Contracts on Trust and Commitment in Supplier-Distributor Relationships," *European Journal of Marketing*, 41 (9/10).

Lambert, Douglas M. and Sebastián J. García-Dastugue (2006), "Cross-Functional Business Processes for the Implementation of Service-Dominant Logic," in *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions*, Robert F. Lusch and Stephen L. Vargo, eds. Armonk: M. E. Sharpe.

Law, Kenneth S., Chi-Sum Wong, and William H. Mobley (1998), "Toward a Taxonomy of Multidimensional Constructs," *Academy of Management Review*, 23 (4), 741-55.

Lusch, Robert F., Stephen L. Vargo, and Alan J. Malter (2006), "Taking a Leadership Role in Global Marketing Management," *Organizational Dynamics*, 35 (3), 264-78.

Lusch, Robert F., Stephen L. Vargo, and Matthew O'Brien (2007), "Competing through Service: Insights from Service-Dominant Logic," *Journal of Retailing*, 83 (1), 5-18.

Lytle, Richard S., Peter W. Hom, and Michael P. Mokwa (1998), "SERV\*OR: A Managerial Measure of Organizational Service-Orientedness," *Journal of Retailing*, 74 (4), 455-89.

MacKenzie, Scott B., Philip M. Podsakoff, and Cheryl Burke Jarvis (2005), "The Problem of Measurement Model Misspecification in Behavioral and Organizational Research and Some Recommended Solutions," *Journal of Applied Psychology*, 90 (4), 710-30.

Madhavaram, Sreedhar and Shelby D. Hunt (2008), "The Service-Dominant Logic and a Hierarchy of Operant Resources: Developing Masterful Operant Resources and Implications for Marketing Strategy," *Journal of the Academy of Marketing Science*, 36 (1), 67-82.

Martin, Kelly D. and Jean L. Johnson (2010), "Ethical Beliefs and Information Asymmetries in Supplier Relationships," *Journal of Public Policy & Marketing*, 29 (1), 38-51.

Mowen, John C. and Kevin E. Voss (2008), "On Building Better Construct Measures: Implications of a General Hierarchical Model " *Psychology & Marketing*, 25 (6), 485-505.

Payne, Adrian F., Kaj Storbacka, and Pennie Frow (2008), "Managing the Co-Creation of Value," *Journal of the Academy of Marketing Science*, 36 (1), 83-96.

Ramani, Girish and V. Kumar (2008), "Interaction Orientation and Firm Performance," *Journal of Marketing*, 72 (1), 27-45.

Reimann, Martin, Oliver Schilke, and Jacquelyn S. Thomas (2010), "Customer Relationship Management and Firm Performance: The Mediating Role of Business Strategy," *Journal of the Academy of Marketing Science*, 38 (3), 326-46.

Ringle, Christian M., Sven Wende, and Alexander Will (2005), "SmartPLS 2.0. Hamburg [Retrieved December 10, 2008 from [www.smartpls.de](http://www.smartpls.de)]."

Rossiter, John R. (2002), "The C-OAR-SE Procedure for Scale Development in Marketing," *International Journal of Research in Marketing*, 19 (4), 305-35.

Ruiz, David Martín, Dwayne D. Gremler, Judith H. Washburn, and Gabriel Cepeda Carrión (2008), "Service Value Revisited: Specifying a Higher-Order, Formative Measure," *Journal of Business Research*, 61 (12), 1278-91.

Stevens, Betsy (2004), "The Ethics of the US Business Executive: A Study of Perceptions," *Journal of Business Ethics*, 54 (2), 163–71.

Taylor, Steven A. (1997), "Assessing Regression-Based Importance Weights for Quality Perceptions and Satisfaction Judgements in the Presence of Higher Order and/or Interaction Effects," *Journal of Retailing*, 73 (1), 135-59.

Vargo, Stephen L. and Robert F. Lusch (2004), "Evolving to a New Dominant Logic for Marketing," *Journal of Marketing*, 68 (1), 1-17.

Vargo, Stephen L. and Robert F. Lusch (2008), "Service-Dominant Logic: Continuing the Evolution," *Journal of the Academy of Marketing Science*, 36 (1), 1-10.

Wetzels, Martin, Gaby Odekerken-Schröder, and Claudia van Oppen (2009), "Using PLS Path Modeling for Assessing Hierarchical Construct Models: Guidelines and Empirical Illustration," *MIS Quarterly*, 33 (1), 177-95.

Williams, John and Robert Aitken (in press), "The Service-Dominant Logic of Marketing and Marketing Ethics," *Journal of Business Ethics*, DOI: 10.1007/s10551-011-0823-z.

Wilson, Bradley, William Callaghan, and Gillian Stainforth (2007), "An Application of Vanishing TETRAD Analysis to a Brand Model," *International Review of Business Research Papers*, 3 (2), 456-85.