Author's response to reviews

Title: The Impact of Economic and Noneconomic Hospital-Physician Exchange on Customer-Oriented Behavior of Physicians and the Moderating Effects of Professional and Organizational Identification: A Cross-sectional Study.

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Version:2 Date:9 December 2014

Author's response to reviews: see over
Dear editor,

Thank you for providing us the opportunity to revise our paper.

We are pleased that the reviewers find that our article is interesting and provides an original contribution to the literature.

We like to thank the reviewers and editor for their substantiated and constructive feedback on our article. We addressed all concerns and suggestions made by the experts with care. We sincerely believe that our paper has indeed improved by the feedback and suggestions.

Below you find our point-to-point response to the comments of the reviewers.

We look forward to an answer of the editorial board, please accept our best regards.

Dr. Jeroen Trybou

Assistant Professor

Ghent University
Reviewer's report

Title: The Impact of Economic and Noneconomic Hospital-Physician Exchange on Customer-Oriented Behavior of Physicians and the Moderating Effects of Professional and Organizational Identification: A Cross-sectional Study.

Version: 1 Date: 7 July 2014

Reviewer: Domenico Salvatore

Reviewer's report:
Dear Author, dear Editors,

Thank you for giving me the opportunity to review the manuscript “The Impact of Economic and Noneconomic Hospital-Physician Exchange on Customer-Oriented Behavior of Physicians and the Moderating Effects of Professional and Organizational Identification: A Cross-sectional Study.”

We like to thank the reviewer for the constructive feedback on our article. We tried to address all concerns and suggestions made by the reviewer. The adjustments are outlined below (as an answer to specific remarks formulated by the reviewer). We sincerely believe that his feedback has improved our article.

It is an interesting article that, in my opinion, could be further improved by

1. By developing more the theoretical argument (or by simplifying it). I would explain more clearly and discuss more in details the reasons why organizational identification and professional identification should have a relationship with Customer-Oriented Behavior and the reasons why this relationship should not be direct but the moderation described in research question 3 and 4. It is important that these theoretical reasons are explained. Another way to address this issue would be to delete organizational and professional identification from the model (and the article).

We agree with the reviewer that the rationale of the concepts of organizational and professional identification as moderators should be explained better. The theoretical framing was limited in the first version of our article. Since both concepts are central to our topic/paper we retained the concepts of identification.

Furthermore we like to clarify that the lack of theoretical argumentation was lacking with respect to professional identification (and less when considering organizational identification). We therefore extended the theoretical rationale with respect to professional identification.
Social identification theory

While many empirical studies have found evidence in support of the norm of reciprocity in a wide variety of organizational attitudes and behaviour [16], it has been recently argued that social exchange is more complex than originally conceptualized and personality characteristics may influence the reciprocity dynamic [28]. More precisely, social identification seems to have powerful effects on how physicians read organizational actions [16]. Social identification is the perception of oneness with, or belonging to, a group [29]. Individuals define themselves in terms of their group membership and ascribe themselves characteristics typical of the group [30]. Social identification thus influences how people define themselves by group membership and thereby impacts individual behaviour [31].

An individual can identify with multiple groups and have multiple job-related identities—for instance, physicians can identify with both their organization and with their profession.

Following Hekman and colleagues [15] we propose that physicians level of group identification affects their reciprocity behaviour with the hospital by influencing their perceived relationship with hospital administrators. Physician-hospital exchange takes place largely through hospital administrators and therefore these relationships shape hospital-physician relationships.

Organizational Identification refers to the extent to which the physician defines himself or herself in terms of the organization and leads to the presumption of a common in-group perspective [32]. Since organizational members who identify to a greater degree with the organization may be more receptive to incorporating organizational interests and perspectives into their own outlook, organizational identification could have a beneficial effect to the organization and may help to ensure that staff work in the interest of the organization [32]. More precisely, it has been shown that an employee who has a high level of organizational identification is more likely to perform extra-role behaviour [30]. We therefore propose that the
identification of physicians with the hospital affects their response to perceptions of physician-
hospital exchange by altering their perceived relationship with their organization. Professional Identification denotes the degree to which physicians identify themselves with their profession [33]. Identification with a group leads people to view non-group members, especially members of rival groups, as being different and unsupportive of their interests [34]. Because administrators are seen as emphasizing organizational concerns over professional needs and the goals and values of the organization (the hospital) and profession (the physician) often conflict, they tend to be rival groups to professionals [35]. Moreover, hospital managers and physicians represent different "tribes," each with its language, values and culture [36]. We therefore maintain that professional identification alters physicians’ responses to physician-hospital exchange in a manner opposite to that of organizational identification and thus inhibits the reciprocity dynamic.

2. By showing the discriminant validity of the measurement model. For example, the authors could report a confirmatory factor analysis.

We agree with the reviewer. Indeed a confirmatory factor analysis was performed (but not reported in the article). Below we provide insight into the component analysis.

In response to the reviewer we added a paragraph to the text discussing this issue.

<table>
<thead>
<tr>
<th></th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COBS_ER_1</td>
<td>.194</td>
</tr>
<tr>
<td>COBS_ER_2</td>
<td>.129</td>
</tr>
<tr>
<td>COBS_IL_1</td>
<td>.969</td>
</tr>
<tr>
<td>COBS_IL_2</td>
<td>.967</td>
</tr>
<tr>
<td>COBS_SD_1</td>
<td>.449</td>
</tr>
<tr>
<td>COBS_SD_2</td>
<td>.217</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
We added the following paragraph to the text.

A confirmatory factor analysis (principal component analysis with oblique rotation) extracted three factors with an eigenvalue greater than one, which corresponded with the four forms of customer-oriented behaviour. A total of 88.3% of variance was explained by the three factors.

3. By reporting more details on the regressions in table 3. At least the estimates of control variables and intercept, the number of observations and the overall model fit.

We acknowledge that we can improve the reporting of results of our regression analyses. We added the details as suggested by the reviewer (control variables intercept, overall model fit).

We note that in response to a comment of another reviewer table 1 was removed and therefore this table (regression analyses) is now table 2 (and not table 3).

Table 2: Regression analyses (130 observations)

<table>
<thead>
<tr>
<th></th>
<th>COBS_ER</th>
<th></th>
<th>COBS_II</th>
<th></th>
<th>COBS_SD</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>ΔR²</td>
<td>P-value</td>
<td>B</td>
<td>ΔR²</td>
<td>P-value</td>
</tr>
<tr>
<td><strong>Main effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.824</td>
<td>0.000</td>
<td>4.164</td>
<td>0.000</td>
<td>4.380</td>
<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
<td>0.031</td>
<td>0.151</td>
<td>0.832</td>
<td>-0.276</td>
<td>0.035</td>
<td>0.102</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.077</td>
<td>0.115</td>
<td>0.007</td>
<td>0.893</td>
<td>0.047</td>
<td>0.962</td>
</tr>
<tr>
<td>Distributive Justice (DJ)</td>
<td>0.381</td>
<td>&lt; 0.001</td>
<td>0.208</td>
<td>0.020</td>
<td>0.056</td>
<td>0.536</td>
</tr>
<tr>
<td><strong>Moderating effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJ X Organizational Identification</td>
<td>-0.156</td>
<td>0.415</td>
<td>0.056</td>
<td>-0.001</td>
<td>0.123</td>
<td>0.988</td>
</tr>
<tr>
<td>DJ X Professional Identification</td>
<td>-0.122</td>
<td>0.295</td>
<td>0.125</td>
<td>-0.047</td>
<td>0.125</td>
<td>0.595</td>
</tr>
<tr>
<td>Constant</td>
<td>3.548</td>
<td>0.000</td>
<td>3.997</td>
<td>0.000</td>
<td>4.334</td>
<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
<td>0.062</td>
<td>0.220</td>
<td>0.658</td>
<td>-0.252</td>
<td>0.032</td>
<td>0.134</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.099</td>
<td>0.034</td>
<td>0.020</td>
<td>0.716</td>
<td>0.004</td>
<td>0.919</td>
</tr>
<tr>
<td>Perceived Organizational Support (POS)</td>
<td>0.458</td>
<td>&lt; 0.001</td>
<td>0.189</td>
<td>0.026</td>
<td>-0.051</td>
<td>0.571</td>
</tr>
<tr>
<td><strong>Moderating effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS X Organizational Identification</td>
<td>-0.146</td>
<td>0.428</td>
<td>0.045</td>
<td>0.055</td>
<td>0.119</td>
<td>0.538</td>
</tr>
<tr>
<td>POS X Professional Identification</td>
<td>-0.107</td>
<td>0.311</td>
<td>0.161</td>
<td>-0.007</td>
<td>0.108</td>
<td>0.933</td>
</tr>
</tbody>
</table>
4. By writing a paragraph on the implications for practice of the study findings.

We agree with the reviewer that a paragraph on the implications for practice would improve our paper. We added a paragraph to the discussion (as suggested by the reviewer).

P 16

The main practical implications of this study lay in providing evidence that (i) positive perceptions of physicians of both economic and noneconomic exchange increases physicians’ customer-oriented boundary spanning behaviours and (ii) organizational identification reinforces this dynamic. With respect to the former (reciprocity), our findings demonstrate that perceived organizational support and distributive justice have an impact on physicians’ customer oriented behavior directed inside (internal influence) and outside the organization (external representation). With respect to the latter, we show that organizational identification enhances the positive reciprocity dynamic between physicians and hospital. This stresses the value of this psychological state. Fostering social identification could enhance the reciprocity dynamic, thereby further improving organizational performance. Given the ever-challenging environment hospitals and administrators face, this is an important insight.

I would also suggest the following minor revisions:
We agree with the reviewer and made the suggested changes.

5. In the abstract the authors wrote that the study was conducted on 761 physicians. Although correct, this information in the abstract may be misleading the reader. The final sample consisted of 130 physicians.
Acknowledged. We changed this in the abstract.

6. In the manuscript there are many acronyms and it is difficult to remember all of them. Maybe authors could spell out at least those used less often.
We agree with the reviewer and changed this aspect. We note that because of the limitations of the journal we retained the acronyms in the abstract.

In the main text we only retained the abbreviation of COBSBs - Customer Oriented Boundary Spanning Behaviours. The acronyms POS (perceived organizational support), DJ (distributive
justice), ER (external representation), II (internal influence) and SD (service delivery), OI (organizational identification) and PI (professional identification) were removed.

7. Among the limitations of the study, authors should also discuss common method variance.
Acknowledged. We added this to the discussion.

P17

Fourth, physicians provided information on both the independent and dependent variables. The use of a common method (a questionnaire) to collect data could lead to bias. However, we reduced the potential for common-method variance by employing measures based on existing scales, proximally separating measures of predictors and the criterion variables and protecting the respondents’ anonymity. Additionally, Harmon’s single-factor tests using factor analysis were conducted. The results showed that none of these factors accounted for the majority of the covariance among the items. We therefore conclude that common-method bias was not a serious threat to our analyses [42].

Best regards,

Domenico

We thank the reviewer for the feedback.
We like to thank the reviewer for the constructive feedback on our article. We tried to address all concerns and suggestions made by the reviewer. The adjustments are outlined below (as an answer to specific remarks formulated by the reviewer).

Reviewer's report:
Page 1: What is HPR?
HPR refers to hospital-physician relationships. We changed this acronym in ‘hospital-physician relationships’. The abbreviation is no longer used in the paper.

P1

**Background:** Hospitals face increasingly competitive market conditions. In this challenging environment hospitals have been struggling to build high-quality hospital-physician relationships. In the literature, two types of managerial strategies for optimizing relationships have been identified. The first focuses on optimizing the economic relationship; the second focuses on the noneconomic dimension, and emphasizes the cooperative structure and collaborative nature of the hospital-physician relationship. We investigate potential spill-over effects between the perceptions of physicians of organizational exchange and their customer-oriented behaviors.

P3

In the literature, two types of managerial strategies for optimizing hospital–physician relationships have been identified. The first focuses on optimizing the economic relationship; the second focuses on the noneconomic dimension, and emphasizes the cooperative structure and collaborative nature of the **relationship between hospital and physician**. [9].
Page 3: What do you mean by spill-over effects?

This dynamic, by which employee attitudes have a significant influence upon customer attitudes, has been termed “spillover effect.” Employee attitudes seem to spill over onto customers in service encounters. Over the past two decades, both academics and practitioners have asserted that such a “spillover” effect between employee attitudes such as justice perceptions, job satisfaction, and organizational commitment and customers’ satisfaction and service quality perceptions. In addition, research reveals that prosocial behaviors of employees, including customer-oriented behaviors, help to explain the spillover effects of employee attitudes on customer outcomes.

We agree with the reviewer that we could improve the description of the ‘spill-over dynamic and added an explanatory paragraph to the introduction.

P3

Ever since the groundbreaking work of Hesket and colleagues [7], it has been clear that spillover effects exist between the perceptions of employees of an organization and the perceptions of customers. More precisely, it appears that HR practices of organizations not only affect employees attitudes such as job satisfaction and organizational commitment but also have a ‘spillover effect’ on to customers (e.g. customer satisfaction and service quality perceptions). This effect refers to the dynamic in which employee attitudes seem to spill over onto customers in service encounters. Following this line of thought, improvements in the workplace environment of service employees might be expected to increase extra-role customer-oriented behaviour [8].

Page 4: Please provide a more precise definition of organizational justice. Why did you focus on distributive justice and perceived organizational support? There are other forms of organizational justice as well as other interesting variables such as leadership. Same question for organizational and professional identification. I disagree with several sentences because there are few studies examining the effects of distributive justice and perceived organizational support among samples of physicians (see Psycinfo database).

(1) We agree with the reviewer that the description of organizational justice can be improved and reformulated the description (see below).
In this paper, we study both approaches from a social exchange perspective. More precisely, we apply the concepts of distributive justice [10] and perceived organizational support [11] to study the exchange relationships that hold between physicians and hospitals. Distributive Justice (DJ), which pertains to the economic dimension, refers to perceptions of the fairness in decision-making and resource allocation [12]. Perceived Organizational Support (POS) can be described as the global beliefs concerning the extent to which the organization values the employees’ contributions and well-being [11].

(2) Indeed there are also other forms of organizational justice. However in this study we focus on organization-focused justice and more precisely distributive justice (Rupp & Crapanzano, 2002). We excluded interactional and procedural justice because our study focuses on the effects of physician-hospital exchanges. Building on previous research we identified two types of exchange and used the construct of justice to study specifically the contractual, economic relationship (in contrast to the studying the different types of justice). The other types of justice do not strictly refer to this contractual relationship (but is indeed related to this economic dimension). Since our study focuses on the economic dimension of physician-hospital and the moderating effects of the CMO we argue that the choice to focus on this forms of organizational justice (applied to the physician-hospital contract) is justified.

(3) We focus on identification as a key psychological state because this may be important in the context of hospital-physician relationships because other control mechanisms (applicable in other non-professional settings) are weaker (or cannot be applied). It contributes to our current body of knowledge because. More precisely, although many empirical studies have found evidence in support of the norm of reciprocity in a wide variety of organizational attitudes and behaviour, it has been recently argued that social exchange is more complex than originally conceptualized and personality characteristics may influence the reciprocity dynamic. More precisely, social identification seems to have powerful effects on how physicians read organizational actions. Social identification thus influences how physicians define themselves by group membership and thereby impacts individual behaviour.

(4) We agree with the reviewer that few studies have investigated this among samples of physicians. On page 4 we note:
few studies have applied these concepts to the hospital–physician relationship. Our objective in this work is to fill this gap by investigating these concepts in a sample of self-employed physicians. We make three important contributions to the literature. First, despite the importance of patient-centered care [11] and the abundant literature on social exchange [12], no a limited number of studies have concentrated on the relationship between these two. Second, while most studies of hospital–physician relationships have focused solely on the financial ties [7], we here study both the economic and the noneconomic sides of the hospital–physician exchange. Third, it has been shown that, in the case of professionals, reciprocity is more complex than originally conceptualized [13]. More precisely, we turn to social identification in order to study the effects of organizational and professional identification in this dynamic of reciprocity.’

Page 5: I disagree with this sentence “no studies have investigated the above assertion in the healthcare context” (see my previous comment).

In response to this comment we performed an additional literature review. In response to this comment and the previous comment we removed this sentence. Since this is the section ‘theoretical background’ it is indeed better not to focus on the research rationale. In addition we note that we removed the reference to ‘no studies’ on page 4 (and changed this in a limited number of studies).

Page 6: Please add references following “Previous research has generally relied on several distinct constructs rooted in social exchange theory to explain organizationally desirable work attitudes and behaviours”. POS was defined above.

Acknowledged. We added references as suggested by the reviewer.

Moreover, previous studies have described how individuals seek to enter and maintain a fair and balanced exchange relationship with the organization at which they work [26]. Two types of benefits may influence the exchange: extrinsic (e.g., financial resources) and intrinsic (e.g. gratitude) benefits [27]. Previous research has generally relied on several distinct constructs rooted in social exchange theory to explain organizationally desirable work attitudes and behaviours [28]. In this study, we focus on two central concepts that refer to self-employed physicians—namely economic exchange and noneconomic exchange [9].
More details are needed on research questions 3 and 4. The response rate is weak and the sample size is limited.

In response to this comment (and a comment from another reviewer) we extended the rationale for these research questions.

Page 6-7

Social identification theory

While many empirical studies have found evidence in support of the norm of reciprocity in a wide variety of organizational attitudes and behaviour [16], it has been recently argued that social exchange is more complex than originally conceptualized and personality characteristics may influence the reciprocity dynamic [28]. More precisely, social identification seems to have powerful effects on how physicians read organizational actions [16]. Social identification is the perception of oneness with, or belonging to, a group [29]. Individuals define themselves in terms of their group membership and ascribe themselves characteristics typical of the group [30]. Social identification thus influences how people define themselves by group membership and thereby impacts individual behaviour [31].

An individual can identify with multiple groups and have multiple job-related identities—for instance, physicians can identify with both their organization and with their profession.

Following Hekman and colleagues [15] we propose that physicians level of group identification affects their reciprocity behaviour with the hospital by influencing their perceived relationship with hospital administrators. Physician-hospital exchange takes place largely through hospital administrators and therefore these relationships shape hospital-physician relationships.

Organizational Identification refers to the extent to which the physician defines himself or herself in terms of the organization and leads to the presumption of a common in-group perspective [32]. Since organizational members who identify to a greater degree with the organization may be more receptive to incorporating organizational interests and perspectives into their own outlook, organizational identification could have a beneficial effect to the
organization and may help to ensure that staff work in the interest of the organization [32]. More precisely, it has been shown that an employee who has a high level of organizational identification is more likely to perform extra-role behaviour [30]. We therefore propose that the identification of physicians with the hospital affects their response to perceptions of physician-hospital exchange by altering their perceived relationship with their organization.

Professional Identification denotes the degree to which physicians identify themselves with their profession [33]. Identification with a group leads people to view non-group members, especially members of rival groups, as being different and unsupportive of their interests [34]. Because administrators are seen as emphasizing organizational concerns over professional needs and the goals and values of the organization (the hospital) and profession (the physician) often conflict, they tend to be rival groups to professionals [35]. Moreover, hospital managers and physicians represent different "tribes," each with its language, values and culture [36]. We therefore maintain that professional identification alters physicians’ responses to physician-hospital exchange in a manner opposite to that of organizational identification and thus inhibits the reciprocity dynamic.

Page 9: Why did you use a short version of the scale used by Bettencourt and Brown (2005)?

We used a short version in order to limit the length of our questionnaire. Physicians are a rather difficult population to survey. They are busy, self-employed professionals with little or no familiarity to the issues under study. Not surprising previous studies also encountered relatively low response rates when surveying physicians (Templeton et al., 1997; Heckman et al., 2009), We therefore chose to limit the length of our questionnaire and used a short version. We note that the independent and moderating variables count 20 items in total.


Page 10: You must explain why you controlled for these variables. Please describe results from past studies. Why did you control for tenure and not for age?

We agree with the reviewer and improved this aspect.

P12

Control variables. A demographic questionnaire was included to obtain descriptive information. Gender, age, tenure, and profession (surgery or internal medicine) were included to rule out potential alternative explanations for our findings. Previous research has suggested that these variables are important to social exchange [15].

We excluded age because of our limited sample (power) and because the age and tenure variables correlated highly ($r = 0.843$), and therefore age was not used as a control variable. Little impact should be expected from omitting age as a control variable. In addition, since profession (surgery or internal medicine) did not correlate with the dependent, independent, and moderating variables, this control was not included. This is included in the paper on p11.

P11

The age and tenure variables correlated highly ($r = 0.843$), and so age was not used as a control variable. In addition, since profession (surgery or internal medicine) did not correlate with the dependent, independent, and moderating variables, this control was not included.

Page 11: What do you mean by “an alpha level of 0.10”? Social identification is not the sole moderator (last sentence of the first paragraph). I believe that Table 1 is not needed.

(1) Following previous studies (Bal et al. 2013) an alpha level of 0.10 was applied to statistically test the moderating effects. This methodological choice originates from the argument that interaction-moderating effects are difficult to detect.

For an more detailed in-depth statistical explanation we refer to the following papers:


However we like to note that our p-values of the interaction effect were 0.045 (and 0.161, 0.538 and 0.933- see table 2). Therefore this methodological decision has no impact on our results.

(2) In response to this comment, we deleted the reference to ‘median of social identification’.

P 12

The first step of the analysis involved entering the control variables, gender, and organizational tenure into the model. In the second step, the centred independent variables were added, and the centred moderating variables were then entered. Having multiplied the centred independent variables by the centred moderators, these two-way interaction terms were entered, while controlling for their main effects and the control variables (gender and organizational tenure). Following Bal et al. [29], we argue that interaction effects may be more difficult to detect (especially in field studies), and so an alpha level of 0.10 was used to estimate interaction effects [30]. To understand the form of these interactions, we plotted the regression lines at 1 standard deviation below and 1 standard deviation above the median.

(3) In response to the suggestion of the reviewer to remove table 1 we removed this table.

Page 13: Please provide explanations for COBSB-II. Please also provide explanations for the non-significant effect of professional identification.

We agree that the discussion with respect to these findings can be extended. We added a possible explanation for our findings.

P14

The outcomes of this study only partially supported the proposed conceptual model. First, we found that economic and noneconomic exchange has indeed a significant impact on COBSB-
**External Representation.** This confirms the spill-over effects towards customer-oriented behaviours. However, in considering the results of COBSB-Internal Influence, it is important to note that, while significant, only a limited percentage of the variance could be explained. A potential explanation for this lower amount of explained variance could be that, in contrast to external representation, internal influence refers to taking initiative actively (which goes beyond communication). It is therefore likely that internal influence is more difficult to realize and influence. In addition, in considering the COBSB-Service Delivery results, we found no significant relationship. We argue that this can be explained by the fact that service delivery may not be influenced by perceptions of physician–hospital exchanges because physicians—as professionals—are considered the primary advocate of their patient, and thus COBSB-Service Delivery should not depend on the physician–hospital exchange.

Second, we found that organizational identification positively moderates the relationship between economic and noneconomic exchange and COBSB-External Representation. This, however, was not the case when COBSB-Internal Influence is considered. In light of our finding that the amount of explained variance of economic and noneconomic exchange in COBSB-Internal Influence is relatively low, this is not very surprising. Third, we did not find that professional identification moderates the relationships between the perceptions of exchange and the customer-oriented behaviours of physicians. This is rather surprising in light of our line of reasoning. A possible explanation is that customer-oriented boundary spanning behaviour refers to a spillover effect between perceptions of organizational treatment by an individual and customer attitudes. Since the level of professional identification (in contrast to organizational identification) does not directly refer to the relationship between individual and organization this could explain our null result. In addition we note that our results did not confirm the theoretical argument of rivalry since organizational and professional identification
correlated positively. It is therefore unlikely to expect that professional identification alters physicians’ responses to physician-hospital exchange in a manner opposite to that of organizational identification and thus inhibits the reciprocity dynamic.

Acknowledged. We added this to the discussion.

P16

The main practical implications of this study lay in providing evidence that (i) positive perceptions of physicians of both economic and noneconomic exchange increases physicians’ customer-oriented boundary spanning behaviours and (ii) organizational identification reinforces this dynamic. With respect to the former (reciprocity), our findings demonstrate that perceived organizational support and distributive justice have an impact inside (internal influence) and outside the organization (external representation). With respect to the latter, we show that organizational identification enhances the positive reciprocity dynamic between physicians and hospital. This stresses the value of this psychological state. Fostering social identification could enhance the reciprocity dynamic, thereby further improving organizational performance. Given the ever-challenging environment hospitals and administrators face, this is an important insight.
Reviewer's report
Reviewer: Christophe Lemiere

We like to thank the reviewer for the constructive feedback on our article. We tried to address all concerns and suggestions made by the reviewer. The adjustments are outlined below (as an answer to specific remarks formulated by the reviewer).

Reviewer's report:
Major Compulsory Revisions
1. The variables – and especially the dependent variable (COBSB) - should be better explained. There are two issues here. One is that the influence of the two main independent variables (DJ and POS) are obviously different across the three components of COBSB, but the authors never define what are exactly these three COBSB components

We agree with the reviewer. We clarified the COBSBs. We extended the theoretical frame to improve understanding. We therefore added several additional references (see below).

p5

Customer-oriented behaviour

Over the past few decades, scholars have asserted that a spillover effect exists between organizational members’ attitudes—such as perceptions of justice and job satisfaction—and customers’ satisfaction and service quality perceptions [17]. Previous studies have generally supported this assertion across several service industries [7]. Customer-oriented boundary-spanning behaviour can be interpreted as extra-role behaviour directed at ‘customers’ [18]. In the services management literature three different types of customer behaviour that link the organization to its customers have been conceptualized [19]. Firstly, employees play an important part in representing the organization to outsiders. They shape the image of the organization and the legitimacy through their advocacy of the organization. External representation therefore focuses on the organizational member as a vocal advocate to outsiders of the organization’s image, goods and services [19].
Secondly, the key position of organizational members who interact with customers provides opportunities to share information internally about customer needs and possible improvements [20]. This is referred to as internal influence which refers to individual initiative in communications to the organization and coworkers to improve service delivery by the organization, coworkers and oneself [21]. Thirdly, customer satisfaction is largely dependent on behavior of the front-line employee who interacts with the customer. Service delivery therefore includes serving customers in a flexible, courteous, conscientious, and responsive manner [22].


Another issue is that I suspect some potential endogeneity or multicollinearity here. For instance, there may be some multicollinearity between POS and OI. More elaborated descriptions of the variables would help dispelling these concerns.

In response to this comment we added extended the examples of the questions to two exemplary items of each instrument. In addition we note that we assessed the correlations between the variables. More precisely the correlation was limited to .424 (organizational identification-POS).

P 10

Measures The survey was collated from previously published instruments, which have demonstrated sound psychometric properties in past research. All question items were translated to Dutch and then back translated in order to ensure that the meaning had been retained—for which three independent translators were used. We used a five point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; and 5 = strongly agree). Following previous research, the items were aggregated to create a scale score.

Physicians’ perceptions of distributive justice were measured by the four-item scale developed and validated by [37]. The items explicitly addressed the financial, economic relationship. Two sample item are: “Does your financial agreement with the hospital reflects the effort you have put into your work?” and “Is your contract appropriate for the work you have completed?”. The internal consistency of the instrument was sufficiently high (Cronbach’s $\alpha = 0.93$).

Physicians’ perceived organizational support was assessed using the eight-item scale of Eisenberger et al. [38] (1986). Cronbach’s $\alpha$ for this was satisfactory (0.94). Two sample item
are: “Help is available from my organization when I have a problem” and “My organization is willing to help me, if I need a special favour”.

We measured physicians’ customer-oriented behaviours using a six-item shorted version of the scale of Bettencourt and Brown [8]. For each type of COBSB, we used 2 items. Sample items are “I encourage friends and family to come to this hospital for its products and services” (external representation); “I encourage other coworkers to contribute ideas and suggestions to improve services” (internal influence); “I take time to understand patients’ needs on an individual basis” (service delivery). The internal reliability for the three scales was acceptable (respectively $\alpha = 0.81$, $\alpha = 0.94$ and $\alpha = 0.80$). A confirmatory factor analysis (principal component analysis with oblique rotation) extracted three factors with an eigenvalue greater than one, which corresponded with the four forms of customer-oriented behaviour. A total of 88.3% of variance was explained by the three factors.

The extent to which self-employed physicians identified with the hospital was measured using the five-item scale of Mael and Ahforth [29]. A sample item is: “When someone criticizes the hospital, it feels like a personal insult’. The internal consistency was acceptable (Cronbach’s $\alpha = 0.83$). Following Hekman et al. [15], the extent to which physicians identified with the medical profession was measured with the same basic items and rating scale used to measure OI, but with all references to the hospital changed to ‘medicine’ or synonyms. A sample item is: “When I talk about physicians, I usually say ‘we’ instead of ‘they’”. Cronbach’s $\alpha$ was acceptable ($\alpha = 0.80$).

Control variables. A demographic questionnaire was included to obtain descriptive information. Gender, age, tenure, and profession (surgery or internal medicine) were included to rule out potential alternative explanations for our findings. Previous research has suggested that these variables are important to social exchange [15].
2. We need some guarantees regarding the “convenience sample”. It is a bit worrying that not much data is provided on the sample. We know this is a “convenience sample”, but how representative is this? More precisely, are the demographic characteristics in the sample (age, tenure, gender… to stick to the most basic ones) consistent with those for the overall population of self-employed doctors working in hospitals? The authors should make an effort to collect data for performing this very basic check.

We agree with the reviewers. We like to clarify that we did do an effort to compare the sample with the populations. We added this to the text. These figures are comparable with the characteristics of the whole medical staff. Non-respondents did not differ from respondents with respect to gender, tenure, age or specialism.

Since it is a convenience sample we specified the selection process / sampling approach. The physicians were invited (and two times reminded) by their CMO to participate in the online survey. The invitation included a letter explaining that this study of Ghent University was supported by the Flemish association of head physicians, the medical board and executive team of the hospital in which they practice. A concise explanation of the study aim was also included. The study was approved by the medical ethics committee (institutional review board) of the University Hospital of Ghent. Participation to the study was voluntary and anonymous.

Study Design. Data were collected from a survey of self-employed physicians practicing at a convenience sample of 6 hospitals in Flanders (Belgium). The physicians were invited (and two times reminded) by their CMO to participate in the online survey. The invitation included a letter explaining that this study of Ghent University was supported by the Flemish association of head physicians, the medical board and executive team of the hospital in which they practice. A concise explanation of the study aim was also included. Out of the 761 physicians from 6 hospitals in Flanders who were invited to participate, 180 physicians completed the online survey (initial response rate = 27%). After checking the results for missing values, the
final sample consisted of 130 physicians. Participation in the study was voluntary and anonymous. The medical ethics committee of the University Hospital of Ghent approved the study.

3. There is a complete lack of details regarding the context. Are these self-employed doctors the only category in hospitals (no salaried doctors?)? If not, what are the other categories? What are the numbers here? It would be interesting to also have some basic description of the typical financial/legal arrangements between these doctors and their hospital. Why these doctors chose to work (I guess part time) in a hospital? How much do they earn for these hospital practice? Do they have other sources of revenues? Are they different from other hospital doctors, in terms of education, specialization...? Without these details, it is very difficult to assess whether the authors asked the right questions. It is even more difficult to interpret their results.

We agree with the reviewer. This study was performed in six Belgian general hospitals. Physician-specialists practice prevalingly as liberal, self-employed professionals (irrespective their specialization e.g. orthopedist or radiologist). From a financial point of view, physicians have a distinct revenue stream. The hospital is reimbursed for the operating expenses (nonmedical activity) by a hospital budget determined by a prospective DRG system. This budget covers the hotel costs, cost of nursing, etc. The physician is entitled a medical fee for the medical activities, mainly reimbursed by fee for service. However, notwithstanding physicians operate as self-employed practitioners with a distinctive revenue stream; they need the organizational support that enables them to practice medicine. To cover these costs, a negotiation takes place to determine the share of fees that should be transferred to the hospital (a financial agreement).

Study Design. Data were collected from a survey of self-employed physicians practicing at a convenience sample of 6 hospitals in Flanders (Belgium). The physicians were invited (and two times reminded) by their CMO to participate in the online survey. The invitation included a letter explaining that this study of Ghent University was supported by the Flemish association of head physicians, the medical board and executive team of the hospital in which they practice. A concise explanation of the study aim was also included. Out of the 761 physicians from 6 hospitals in Flanders who were invited to participate, 180 physicians completed the
online survey (initial response rate = 27%). After checking the results for missing values, the final sample consisted of 130 physicians. Participation in the study was voluntary and anonymous. The medical ethics committee of the University Hospital of Ghent approved the study.

Discretionary Revisions
4. The authors should acknowledge alternative paths of research on the issue of professional/organizational identification. The authors have chosen a highly quantitative (and – I must say - rather dry) to explore this key issue of identification and performance among hospital doctors. I do not have a comprehensive knowledge of this approach, but most of the papers I have read on it (when applied to hospitals) are not very convincing. A mixed-method approach (including qualitative surveys) is – in my view – much more promising (see for instance Pratt 2006). Could the authors acknowledge these alternative approaches?

We agree with the reviewer. 
We added this to the discussion (as suggested by the reviewer). 
We like to highlight that our research effort composes of several individual studies and also a qualitative study was included. 
We agree that qualitative research in the field of identification contributes to our understanding. However we also like to argue that this is also the case for quantitative studies. Moreover our study shows quantitatively that organizational identification is a moderator.

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This study provides preliminary evidence that the quality of physicians’ customer-oriented behaviours depends not only on the patient and physician, but also on the interaction between the physician and the hospital at which he or she practices. These findings imply that investment in building high-quality relationships with physicians may have an effect on customer-oriented behaviours, and thus the patient experience. Future study is needed to further confirm this relationship. Besides quantitative research a qualitative inquiry or a mixed-method design would be valuable to gain an in-depth understanding of the effects of social identification on physician-hospital reciprocity.
We like to refer the reviewer to two other recent papers which use a qualitative inquiry.

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Building on previous comments, it seems the approach proposed by the authors could have been applied to any setting (hospital or not). I do not think we are ready for such a “size fits all” approach. For instance, as documented by many authors, a major motivation driver for doctors is the ability (provided by the institution they work for) to “enact” their professional skills and competence. How is this captured in the proposed approach? In the POS variable? But, from the paper, we do not much about its content.

We agree with the reviewer that hospital-physician relationships are complex because of the highly specific context and professional nature of this relationship. Our study concentrates on the non-professional aspects of physician-hospital exchanges (economic and noneconomic exchange). We agree with the reviewer that this is also an important aspect and therefore an avenue for future research. We therefore added this to the discussion.

**Finally, it would be valuable to extend this study with other measures of the customer-oriented behaviour of physicians. A methodological design involving objective measures of customer-oriented behaviour, or involving patients, peers, and other caregivers, to collect data on physicians’ customer-oriented attitudes would be valuable. In addition, hospital-physician relationships are characterized by an ideologically pluralistic work setting in which professional and administrative roles bump up against each other [43]. Therefore it would be interesting to differentiate between administrative and professional dimensions of noneconomic physician-hospital exchange [44].**

We thank the reviewer for the feedback and suggestions for improvement.
Reviewer's report
Reviewer: Giorgio Cometto

We like to thank the reviewer for the constructive feedback on our article. We tried to address all concerns and suggestions made by the reviewer. The adjustments are outlined below (as an answer to specific remarks formulated by the reviewer).

Reviewer's report:
The manuscript has some innovative elements in attempting to analyse some determinants of physician behaviour; the methods applied are appropriate and the results have some potential policy implications.

However, the data from the cross-sectional survey are limited in the contents they present, in that no intervention has been tested to improve either perceptions or behaviour of the physicians, nor any attempt has been made to see if the variables investigated demonstrate an empirical correlation with outcomes relating to patient care, placing a significant limitation on the policy relevance and interest of the study.

We agree that including outcomes related to patient care would increase the added value of our study. However at the same time we like to clarify that we focus specifically on patient-oriented care (and not clinical outcomes). We added the suggestion of the reviewer to this paragraph.

P17

Finally, it would be valuable to extend this study with other measures of the customer-oriented behaviour of physicians or clinical outcomes. A methodological design involving objective measures of customer-oriented behaviour, or involving patients, peers, and other caregivers, to collect data on physicians’ customer-oriented attitudes would be valuable.

The small scale, selective setting and self-selection of respondents are other important limitations that are however explicitly acknowledged.

We acknowledge this remark. We like to highlight that physicians are a rather difficult population to survey. They are busy, self-employed professionals with little or no familiarity to the issues under study. Not surprising previous studies also encountered relatively low response rates when surveying physicians (Templeton et al.; Heckman et al., 2009),


The adoption of several analytical frameworks from the social sciences literature, and the corresponding terminology, moreover, make the article extremely difficult to read, from the title to the abstract down to the main text.

In response to this comment (and the comments of the other reviewers) we improved the build-up of our article.
Specifically:
- By improving the description of COBSB.
- By improving the theoretical description of social identification (organizational and professional identification).
- By deleting the acronyms (POS, DJ, II, SD, ER) throughout the text.
- Extending the discussion and practical implications.

We like to thank the reviewer for the feedback.