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## **A LIGHT IN THE DARK: THE BENEFITS OF CO-PRODUCTION IN SERVICE FAILURES**

**Abstract:** Co-production is increasingly common but, at the same time, services failures are inevitable. Considering that previous studies are controversial about the effects of failed co-produced services, the goal of this research is to investigate the influence of co-production on causal locus attribution, in addition to emotional and attitudinal outcomes. Two experimental studies show that co-production reduces the self-serving bias, a result that brings implications for the services literature and practice. In addition to the positive effects of co-production, evidenced by previous studies, this research shows that companies and customers can benefit from co-production even when failures occur.

**Keywords:** Co-production; customer participation; self-serving bias; locus attribution; regret; disappointment.

### **1 Introduction**

Service co-production – customer participation in service specification and delivery (Yen, Gwinner, & Su, 2004) – is an emerging trend in service marketing (Joosten, Bloemer, & Hillebrand, 2016). As a service management strategy, co-production may lead to positive outcomes to customers and service providers as it increases customer satisfaction, perceived control, and perceived quality of an offer (Chan, Yim, & Lam, 2010; Golder, Mitra, & Moorman, 2012; Hunt, Geiger-Oneto, & Varca, 2012). In spite of marketers and researchers' growing interest in co-production, research on the consequences of failed co-produced services is scarce (Heidenreich, Wittkowski, Handrich, & Falk, 2015). For instance, whether failed co-produced services could bring any positive consequence for companies and customers when compared to failed non-co-produced service remains underexplored.

Causal locus attribution – the extent to which one perceives the cause of a failure to be located inside or outside oneself (Folkes, 1984; Weiner, 2000) – seems imperative to understand the consequences of failed co-produced services. Despite such importance, there are few studies about the relationship between co-production and causal locus attribution (i.e., whether the cause of a failure is perceived as internal – due to the customer – or external – due to the service provider or other circumstances) in a failed co-produced service (e.g., Heidenreich et al., 2015; Jong-Kuk, Min-Sook, Mi-Ok, & Mi-Ri, 2010; Yen et al., 2004). These studies show that high participation leads to either more external (Jong-Kuk et al., 2010; Yen et al., 2004) or internal attributions (Heidenreich et al., 2015). In short, the literature is conflicting and inconclusive.

Moreover, sometimes it may be hard to attribute a failure to the service provider or the customer, because people may be uncertain about causal attributions (Choi & Mattila, 2008; Weary & Jacobson, 1997). Addressing causal uncertainty in failed co-produced services is relevant because causal uncertainty may lead to reduced emotional

intensity (Barrowclough & Hooley, 2003). Thus, it would be interesting to understand how causal uncertainty affects customers' reactions in case of failed co-produced services.

Therefore, the purpose of this research is threefold: 1) to investigate the influence of co-production on customers' causal locus attribution for failed co-produced services; 2) to investigate customers' dissatisfaction and emotional reactions, particularly regret and disappointment, to such failures; and 3) to explore how customer who co-produced react when causal locus attribution is uncertain. Regret and disappointment were chosen among several negative emotions because they are the two emotions most closely related to decision making (Van Dijk & Zeelenberg, 2002) and have been addressed as antecedents of customer dissatisfaction (Zeelenberg & Pieters, 2004).

The present research contributes to the literature of service management in three ways. First, it sheds light in the controversial relationship between co-production and causal locus attribution. Second, in addition to the bipolar causal locus attribution (customer vs. company), it investigates a very likely situation in a co-produced service with a failure: uncertain causal locus. To the best of our knowledge, no previous research about causal locus attribution in failed co-produced services has addressed causal uncertainty. Third, it investigates emotional and attitudinal outcomes of co-production and causal locus attribution.

## **2 Co-production and causal locus attribution**

Co-production refers to customer participation in the creation of the core offering (Etgar, 2008; Lusch & Vargo, 2006). In the case of services, it refers to

customer participation in service specification and delivery (Yen et al., 2004), such as designing a workout programme with a personal trainer at the gym. Co-production has been gaining attention in the service literature (Joosten et al., 2016), especially due to its positive outcomes for customers and service providers (Mustak, Jaakkola, Halinen, & Kaartemo, 2016).

When customer and service provider are collaborating and employing resources to design a service, the benefits for customers may consist in outcomes very close to their expectations (Golder et al., 2012) and increased satisfaction (Hunt et al., 2012). For the service provider, the benefits may be reduced costs (Mustak, et al., 2016) and greater customer loyalty derived from customer satisfaction (Kumar, Sharma, Shah, & Rajan, 2013).

Sometimes co-production leads to unsatisfactory outcomes though (Mustak, et al., 2016). Unsatisfactory outcomes, in turn, often lead customers to make attributions about the cause of the failure (Weiner, 2000). One of the attributions a customer may formulate after a failure refers to the causal locus – attributing the cause of the failure to oneself, the company, or the circumstances (Folkes, 1984; Weiner, 2000).

So far, the literature is still inconclusive on whether customers who co-produce will make more external (vs. internal) attributions after service failures. One research stream states that a self-serving bias occurs, that is, the tendency for individuals to attribute success to internal causes (i.e., themselves) and failures to external causes (i.e., other people or circumstances) (Mezulis, Abramson, Hyde, & Hankin, 2004; Weiner, 1985). However, another research stream states that co-production leads to more perceived control (Chan et al., 2010), which should lead to more internal attributions for failures (Heidenreich et al., 2015; Hui & Toffoli, 2002). In short, there are different

approaches suggesting that co-production may either increase or decrease the self-serving bias (Yen et al., 2004).

Jong-Kuk et al. (2010) and Yen et al. (2004) show that co-production may increase external attributions and, therefore, the self-serving bias. According to these authors, higher customer participation leads to more external attribution than lower customer participation. The authors' rationale, based on the equity theory, is that high participation implies high inputs from the customer (e.g., information and effort). The discrepancy between customers' high inputs and service providers' low output (i.e., failed service) will generate customers' desire to protect their self-esteem, which will make them attribute blame to the service provider rather than to themselves.

However, the theory has conflicting findings. For example, Heidenreich et al. (2015) found that a high level of co-production leads to more internal attributions than a lower level of co-production. According to them, a high level of co-production brings higher customer involvement, which in turn is positively related to responsibility. So, customers with high level of co-production feel more responsible and make more internal attributions than customers with low level of co-production (Heidenreich et al., 2015).

Corroborating this point-of-view, Bendapudi and Leone (2003) have shown that there is no difference in the resulting dissatisfaction with the company between customers who co-produced and those who did not. According to the authors, differences appear only when customers have the option to co-produce. Giving customers this option leads to lower dissatisfaction with the company, suggesting that these customers have reduced self-serving bias (i.e., increased internal attribution) (Bendapudi & Leoni, 2003).

Other evidence suggesting that co-production may increase internal attribution is the higher perceived control level among customers who co-produce (Chan et al., 2010; Pacheco, Lunardo, & dos Santos, 2013). Customers with high perceived control levels tend to make more internal than external attributions (Hui & Toffoli, 2002). The more people perceive having control over their acts, the more responsible they feel (Caouette, Wohl, & Peetz, 2012). Lack of control, in turn, increases attributional activity (Pittman & Pittman, 1980), suggesting that the lower the perceived control, the higher the search for someone to blame for a failure.

In an effort to understand which perspective holds for failed co-produced services, this paper relies on such control and responsibility literature and empirical evidence to expect more internal attributions for failed co-produced services. Previous results linking co-production to higher external attribution may be due to factors other than co-production itself, such as effort and commitment (e.g., Yen et al., 2004). Hence, the following hypothesis is formulated:

H1: Customers who co-produce (vs. do not co-produce) tend to make more internal than external attributions for a service failure.

Rather than blaming the service provider or themselves, sometimes customers may be uncertain about causal attributions (Choi & Mattila, 2008; Weary & Jacobson, 1997). Causal locus uncertainty may be a consequence of chronic individual differences but it may also be produced by the situation (Weary & Jacobson, 1997). It is reasonable to think that co-production may enhance the possibility of such causal locus uncertainty because it brings the customers into the service production process, driving them and the service provider to work jointly. In this case, both the customer and service provider

could be responsible for what they have jointly produced. In some situations, it may be difficult to identify only one responsible because both parties may have some responsibility over the results. Besides, there may be more than one cause for a failure, what can lead to causal uncertainty (Barrowclough & Hooley, 2003).

Causal uncertainty may lead to reduced emotional intensity (Barrowclough & Hooley, 2003), mitigating customers' negative reactions towards the service provider (Choi & Mattila, 2008). Therefore, it is logical to expect reduced levels of negative emotions from customers with causal locus uncertainty (vs. internal or external causal locus attribution). However, this result cannot be taken for granted, since we have not found previous research addressing locus uncertainty in failed co-produced services. We do not formulate hypothesis about the effects of uncertain causal locus, but we do investigate how locus uncertainty affects regret, disappointment, and dissatisfaction in failed co-produced services.

Regret emerges from a comparison between the result and the outcome that could have been obtained if the customer had done something different (Zeelenberg et al., 1998). Thus, regret is associated with internal attribution (López-López, Ruiz-de-Maya, & Warlop, 2014). Disappointment emerges from a comparison between the obtained result and the outcome that could have been obtained if an external circumstance (e.g., the service provider's actions) had been different (Zeelenberg et al., 1998). Consequently, disappointment may emerge when the causal locus is on the company. In line with that, it is expected that customers will experience more regret when they attribute the cause of a failed co-produced service to themselves, and more disappointment when they attribute the cause to the service provider.

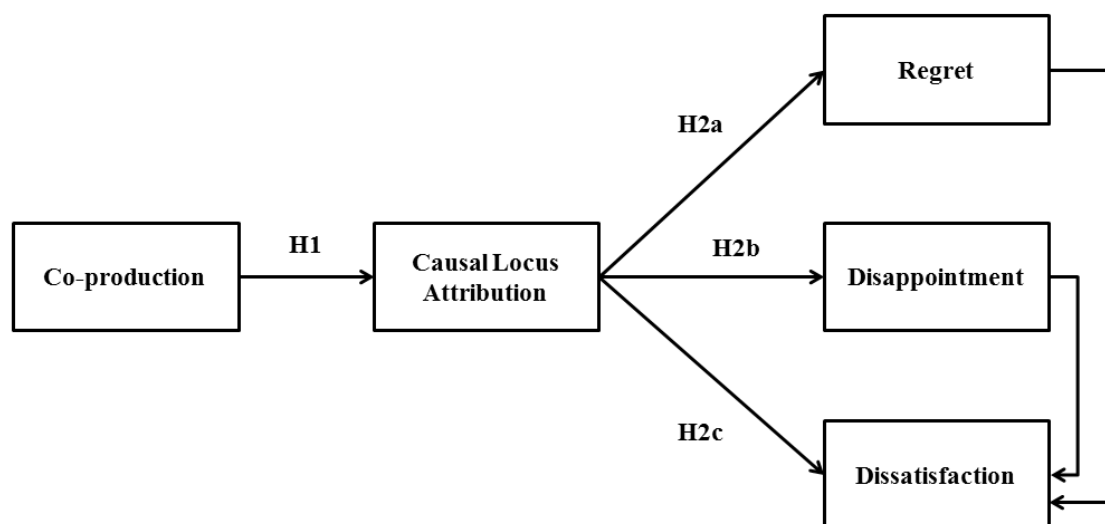
Causal attribution can also affect (dis)satisfaction. According to Choi and Mattila (2008), customers report lower satisfaction levels after a service failure when

they perceive that the service provider could have prevented the failure compared to when the customer is partly responsible for the failure. This suggests that the more external the attribution, the higher the dissatisfaction. Besides, Zeelenberg and Pieters (2004) found that both regret and disappointment influence dissatisfaction – disappointment being a better predictor than regret. This high association between dissatisfaction and disappointment is an additional sign of a potential effect of external attribution on dissatisfaction. Therefore, the following hypothesis is formulated:

H2: In case of failed services, the higher the customer internal attribution, (a) the higher the regret, (b) the lower the disappointment, and (c) the lower the dissatisfaction.

Figure 1 shows the theoretical framework that integrates co-production, causal locus attributions, regret, disappointment, and dissatisfaction<sup>1</sup>.

**Figure 1 – Theoretical framework**



<sup>1</sup> We do not formulate hypotheses about the effects of regret and disappointment on dissatisfaction because these relationships are well documented in the literature (e.g., Zeelenberg & Pieters, 2004).



### **3 Study 1**

Considering that the goal of this study is to investigate the relationships between co-production, causal locus attribution, emotional reactions, and dissatisfaction, the use of experimental studies is adequate because they are the only ones that can address causal relationships. Study 1 tested hypotheses H1 and H2. Co-production (co-production vs. no co-production) was manipulated and causal locus attribution, regret, disappointment, and dissatisfaction were measured, as described next. The final sample, recruited via Mechanical Turk, consisted of 118 people (53% women,  $M_{\text{age}}=37.25$ ,  $SD=13.72$ ) after deleting 13 respondents with incorrect answers to the attention check questions.

#### **3.1 Procedure**

Each participant was randomly assigned to two co-production or two no co-production scenarios to test two different service contexts (restaurant and gym). First they read a text about a meal that was worse than expected (restaurant context) and answered a few questions about it. Then, they read a text about workout programme results that were worse than expected (gym context). In the restaurant context, co-production was manipulated through the creation of a special meal the way the participant wanted (vs. choosing the meal in pre-existing option menu). In the gym context, co-production was manipulated through the active participation in the design of the workout programme together with the personal trainer (vs. the personal trainer designing the entire workout programme).

Scenarios were reported as credible for both restaurant ( $M=5.57$ , 1 = impossible to occur in real life, 7 = possible to occur in real life) and gym contexts ( $M=5.64$ ). A one-way ANOVA showed that scenarios with and without co-production did not vary regarding their credibility ( $p_{\text{rest}}=.96$ ;  $p_{\text{gym}}=.44$ ).

### **3.2 Measures**

Co-production manipulation check consisted of one item measuring the extent to which participants perceived that they have actively participated in the creation of the meal (restaurant context) and in the design of the workout programme (gym context). Causal locus attribution was measured with a bipolar item asking who was the responsible for the fact that the meal/workout results were worse than expected (1 = the restaurant/personal trainer, 7 = myself).

Regret, disappointment, and dissatisfaction were measured with 7-point items adapted from Marcatto and Ferrante (2008): “I wish I had chosen differently” for regret, “I wish the other people/factors involved that were beyond my control had led me to a different outcome” for disappointment, and “In general, how dissatisfied were you with this restaurant /personal trainer?” for dissatisfaction.

### **3.3 Results**

A one-way ANOVA revealed that manipulations were effective in both service contexts. Participants in the co-production scenario reported higher levels of participation in the creation of their meal ( $F(1, 116)=254.78$ ,  $p<.001$ ,  $M=6.28$ ,  $SD=1.22$ ) and workout programme ( $F(1, 116)=314.85$ ,  $p<.001$ ,  $M=6.35$ ,  $SD=.83$ ) than participants

in the no co-production scenarios in both restaurant ( $M=2.15$ ,  $SD=1.56$ ) and gym contexts ( $M=2.02$ ,  $SD=1.66$ ).

To test the hypotheses, ANOVA and regression analysis were used. Whilst ANOVA was used to test the relationship between categorical and interval variables, regression analysis was used to test the relationship between interval variables. Consistent with H1, customers who co-produced reported more internal attribution for failures than customers who did not co-produce. For the restaurant context, participants in the no co-production scenario attributed the blame more to the restaurant ( $F(1, 116)=57.29$ ,  $p<.001$ ,  $M=3.02$ ,  $SD=1.89$ ) whereas participants in the co-production scenario attributed the blame more to themselves ( $M=5.46$ ,  $SD=1.58$ ). For the gym context, participants in the no co-production scenario also attributed the blame more to the service provider ( $F(1, 116)=33.85$ ,  $p<.001$ ,  $M=3.39$ ,  $SD=2.12$ ) than participants in the co-production scenario ( $M=5.37$ ,  $SD=1.50$ ).

H2a stated that the higher the internal attribution, the higher the customer regret. There was no support for this hypothesis because neither co-production nor locus attribution affected regret ( $p>.10$  for both service contexts). Consistent with H2b, customers who reported higher internal attribution (i.e., customers who co-produced) reported lower disappointment. The effect of co-production on disappointment was significant for the restaurant context ( $p<.001$ ) and marginally significant for the gym context ( $p<.10$ ). For the restaurant context, participants in the co-production scenario reported lower disappointment ( $F(1, 116)=10.74$ ,  $p<.001$ ,  $M=4.53$ ,  $SD=1.77$ ) than participants in the no co-production scenario ( $M=5.44$ ,  $SD=1.23$ ). For the gym context, disappointment level was slightly lower for participants in the co-production scenario ( $F(1, 116)=3.00$ ,  $p=.09$ ,  $M=4.68$ ,  $SD=1.78$ ) than for participants in the no co-production scenario ( $M=5.25$ ,  $SD=1.74$ ).

Regression analyses showed a significant effect of locus attribution on disappointment for both the restaurant ( $R^2=.11$ ,  $\beta=-.34$ ,  $t=-3.87$ ,  $p<.001$ ) and gym contexts ( $R^2=.11$ ,  $\beta=-.33$ ,  $t=-3.71$ ,  $p<.001$ ). The negative valence of the  $t$  values indicates that the more internal the attribution, the lower the disappointment. This result provides further support to H2b.

Co-production was also associated with lower dissatisfaction levels. For the restaurant context, participants in the co-production scenario reported lower dissatisfaction ( $F(1, 116)=28.84$ ,  $p<.001$ ,  $M=4.23$ ,  $SD=1.70$ ) than participants in the no co-production scenario ( $M=5.72$ ,  $SD=1.31$ ). Similarly, for the gym context, participants in the co-production scenario reported lower dissatisfaction ( $F(1, 116)=24.97$ ,  $p<.001$ ,  $M=4.40$ ,  $SD=1.75$ ) than participants in the no co-production scenario ( $M=5.79$ ,  $SD=1.23$ ).

For the restaurant context, regression analyses showed significant effects of locus attribution ( $R^2=.34$ ,  $\beta=-.58$ ,  $t=-7.73$ ,  $p<.001$ ) and disappointment ( $R^2=.16$ ,  $\beta=.40$ ,  $t=4.74$ ,  $p<.001$ ) on dissatisfaction. No significant effect of regret on dissatisfaction ( $p=.56$ ) was found though. For the gym context, there were significant effects of locus attribution ( $R^2=.15$ ,  $\beta=-.39$ ,  $t=-4.52$ ,  $p<.001$ ) and disappointment ( $R^2=.07$ ,  $\beta=.26$ ,  $t=2.87$ ,  $p<.01$ ) on dissatisfaction, and a marginally significant effect of regret on dissatisfaction ( $R^2=.03$ ,  $\beta=.17$ ,  $t=1.81$ ,  $p=.07$ ).

Figures 2 (restaurant context) and 3 (gym context) show levels of regret, disappointment, and dissatisfaction for co-production and no co-production conditions.

**Figure 2 – Customer regret, disappointment, and dissatisfaction for the restaurant context**

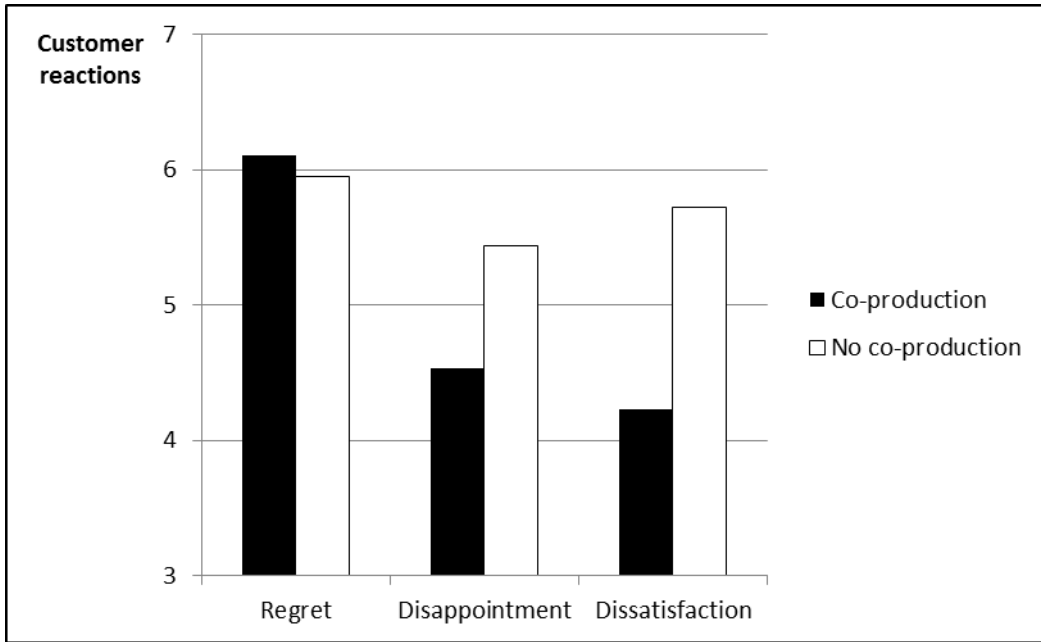
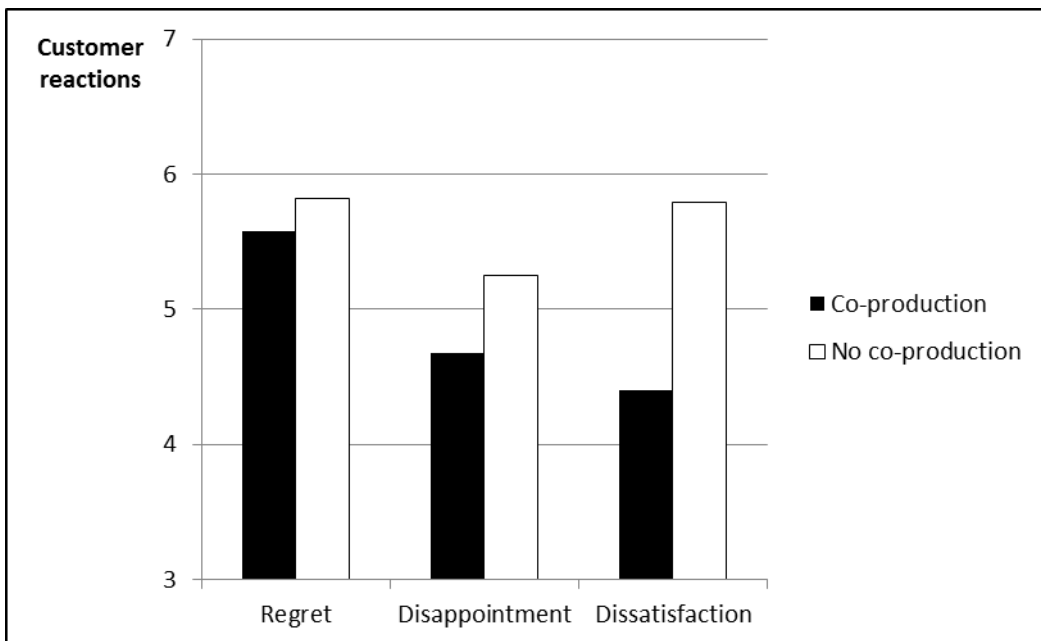


Figure 3 – Customer regret, disappointment, and dissatisfaction for the gym context



### 3.4 Discussion

Results from two different service contexts (gym and restaurant) suggest that co-production is positively associated with internal attributions for a service failure. These

results are in line with results from Heidenreich et al. (2015), but contradict findings from Jong-Kuk et al. (2010) and Yen et al. (2004). Results from both service contexts (gym and restaurant) are consistent with indications that co-production is positively related to perceived control (Chan et al., 2010; Pacheco et al., 2013), which in turn is positively related to internal attributions (Hui & Toffoli, 2002), and that perceived control and responsibility are closely related (Weiner, 1985).

Results of this first study show that failed co-produced services may have more beneficial consequences for the service provider than failed services that were not co-produced. When customers participate in the service production and the outcome is worse than expected, customers tend to attribute at least part of the blame to themselves, feel less dissatisfied and disappointed with the service provider than customers who did not participate. Co-production and the increased internal attribution derived from co-production did not make participants feel more regretful, contradicting the results of López-López et al. (2014). These results suggest that co-production decreases customer negative emotional reactions toward the service provider, but customer self-focused negative emotional reactions remain constant, regardless of the presence of co-production.

So far, the results show that co-production has positive consequences even when services fail. Thus, co-production may be instigated by service providers that seek to reduce customer disappointment and dissatisfaction. In order to further investigate the consequences of failed co-produced services, study 2 examines customer regret, disappointment, and dissatisfaction in a failed co-produced service with different causal locus attributions. For this purpose, co-production is kept constant while only causal locus is manipulated. This enables an investigation of consequences of failed co-produced services from a different perspective.

## 4 Study 2

Study 2 extends the results of Study 1 by investigating the effects of causal locus attribution on regret, disappointment, and dissatisfaction, while exploring how people react when causal locus attribution is uncertain. This study consisted in a single-factor between-subjects experiment that tested hypotheses H2a, H2b, and H2c. It was conducted in the context of an online service that allowed customers to co-produce a T-shirt. Causal locus was manipulated in a way that the fault was on the company (company's locus condition), on the customer (customer's locus condition), or uncertain (uncertain locus condition). The final sample consisted of 129 participants (47% women,  $M_{\text{age}}=30.86$ ,  $SD=10.06$ ) after deleting 15 respondents with incorrect answer to the attention check. Participants were recruited via Mechanical Turk and randomly assigned to one of the three conditions of the study.

### 4.1 Procedure

Participants were told to read a text and imagine themselves in a scenario that involved the co-production of a T-shirt on a company's website, the design of the artwork to be printed in the T-shirt, and the choice of the T-shirt's size and colors. The scenario stated that the co-produced T-shirt delivered at their homes was worse than expected. Then, participants assigned to the company's locus scenario read the following text: "So, you think it was the company's fault, since they made some changes in the artwork you designed". Participants assigned to the customer's locus scenario read the text: "So, you think it was your fault, since you designed an artwork

that did not look well on a T-shirt”. Finally, participants of the uncertain locus scenario read the text: “You do not know whose fault it was, because you do not remember whether you designed the artwork that way or the company made some changes on it”. Participants reported the scenarios as credible ( $M=6.28$ ,  $SD=.98$ , 1 = impossible to occur in real life, 7 = possible to occur in real life) with no differences among the experimental conditions ( $F(2, 126)=.45$ ,  $p=.64$ ).

## 4.2 Measures

Manipulation check was measured using three 7-point items, one for each manipulation: “The unpleasant result was...” “not at all caused by me / very much caused by me” for the internal locus attribution; “not at all caused by the company / very much caused by the company” for the external locus attribution; and “I know for sure the cause of the result / I do not know for sure the cause of the result” for the uncertain causal locus. The same measures of Study 1 were used to measure regret, disappointment, and dissatisfaction.

## 4.3 Results

Causal locus manipulation was effective. Participants in the company’s locus scenario reported higher company’s locus attribution ( $F(2, 126)=45.89$ ,  $p<.001$ ,  $M=5.65$ ,  $SD=1.25$ ) than participants in customer’s locus ( $M=2.86$ ,  $SD=1.57$ ,  $p<.001$ ) and uncertain locus scenarios ( $M=4.15$ ,  $SD=1.29$ ,  $p<.001$ ). Participants in the customer’s locus scenario reported higher customer’s locus attribution ( $F(2, 126)=55.36$ ,  $p<.001$ ,  $M=5.63$ ,  $SD=1.51$ ) than participants in the company’s locus



( $M=2.57$ ,  $SD=1.26$ ,  $p<.001$ ) and uncertain locus scenarios ( $M=4.05$ ,  $SD=1.34$ ,  $p<.001$ ). Finally, participants in the uncertain locus scenario reported higher locus uncertainty ( $F(2, 126)=24.85$ ,  $p<.001$ ,  $M=5.53$ ,  $SD=1.89$ ) than participants in the company's locus ( $M=3.28$ ,  $SD=1.83$ ,  $p<.001$ ) and customer's locus scenarios ( $M=2.91$ ,  $SD=1.74$ ,  $p<.001$ ).

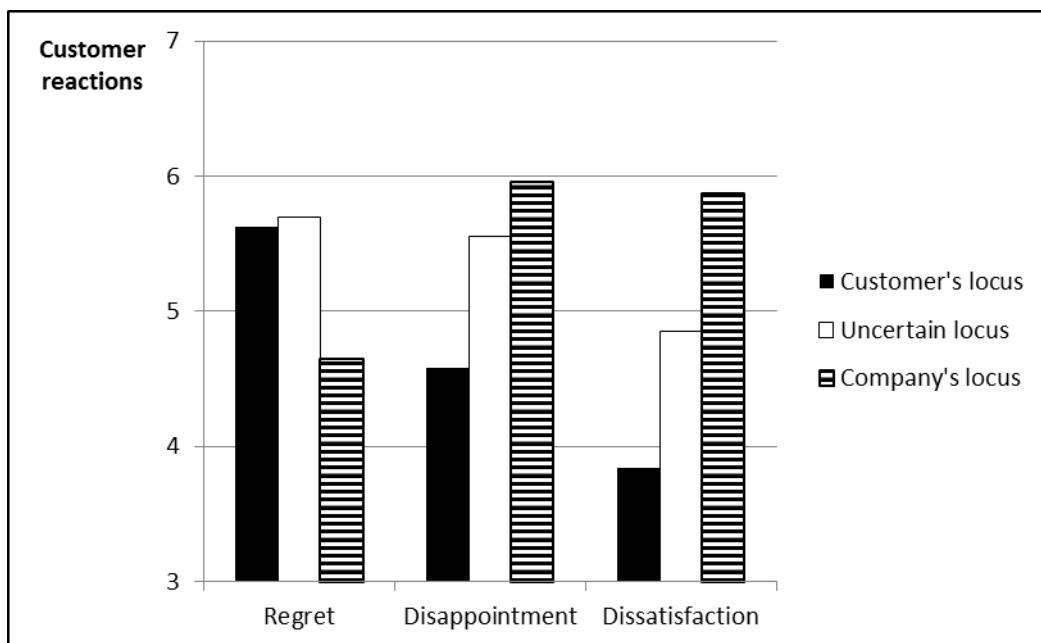
In this study, ANOVA was used to test the causal relationship between causal locus attribution (multicategorical variable) and its consequents (regret, disappointment, and dissatisfaction). The ANOVA revealed a main effect of causal locus attribution on regret ( $F(2, 126)=7.38$ ,  $p<.001$ ). Participants in the customer's locus scenario reported higher regret ( $M=5.63$ ,  $SD=1.48$ ) than participants in the company's locus ( $M=4.65$ ,  $SD=1.52$ ,  $p<.01$ ). This result supports H2a, indicating that higher internal attribution may lead to higher customer regret. Participants in the uncertain locus scenario also reported higher regret ( $M=5.70$ ,  $SD=1.27$ ) than participants in the company's locus ( $p<.01$ ), but there was no significant difference on regret levels from uncertain and customer's locus ( $p=.82$ ).

Causal locus attribution also affects disappointment ( $F(2, 126)=9.36$ ,  $p<.001$ ). Disappointment was higher among participants in the company's locus scenario ( $M=5.96$ ,  $SD=1.03$ ) than those in the customer's locus ( $M=4.58$ ,  $SD=1.97$ ,  $p<.001$ ). This result supports H2b, indicating that higher external attribution may lead to higher customer disappointment. Participants in the uncertain locus scenario also reported higher disappointment ( $M=5.55$ ,  $SD=1.48$ ) than participants in the customer's locus ( $p<.01$ ), but there was no significant difference in disappointment levels between the uncertain and the company's locus ( $p=.22$ ).

Causal locus attribution also affects customer dissatisfaction ( $F(2, 126)=20.50$ ,  $p<.001$ ). Dissatisfaction was higher for participants in the company's locus scenario

( $M=5.87$ ,  $SD=1.11$ ) than for participants in the customer's locus ( $M=3.84$ ,  $SD=1.84$ ,  $p<.001$ ) and uncertain locus scenarios ( $M=4.85$ ,  $SD=1.48$ ,  $p<.01$ ). This result supports H2c, indicating that higher external attribution may lead to higher customer dissatisfaction. Participants in the customer's locus scenario reported the lowest dissatisfaction level, significantly different even from uncertain locus ( $p<.01$ ). Figure 4 shows customer regret, disappointment, and dissatisfaction in each scenario.

**Figure 4 – Customer regret, disappointment, and dissatisfaction for each attribution.**



#### 4.4 Discussion

This study tested hypotheses H2a, H2b, and H2c, which were all supported. More specifically, the higher the internal attribution, the higher the regret, and the lower the disappointment and dissatisfaction. These results go beyond study 1 because there is a new comparison element: the uncertain locus, which could be expected to reduce regret, disappointment, and dissatisfaction intensity (Barrowclough & Hooley, 2003).

However, results show that causal uncertainty does not necessarily imply in reduced emotional intensity. Participants in the uncertain locus scenario reported to be as regretful as participants in the customer's locus scenario. In other words, participants who were uncertain about who they should blame felt as bad for something they did (or did not do) as participants who knew they were the ones to blame. Thus, the tendency to make external attributions to protect the self was not fully working for participants in the uncertain locus scenario, contradicting the self-serving bias perspective.

The other results regarding uncertain locus – disappointment level similar to company's locus and higher than customer's locus, dissatisfaction level lower than company's locus and higher than customer's locus – do not contradict the self-serving bias perspective. These results show that being uncertain about who to blame in a failed co-produced service may lead to high levels of regret and disappointment and a moderate level of dissatisfaction, if compared to knowing that either the company or the customer itself should be blamed.

## **5 General Discussion**

The results of both studies contradict the self-serving bias. Study 1 shows that co-producers blame themselves more than non-co-producers. Study 2 shows that co-producers facing an uncertain causal locus situation feel as regretful as co-producers that faced a failed service caused by themselves. Both reactions indicate high self-blame. The finding that co-production leads to more internal attributions contradicts the self-serving bias literature (Mezulis et al., 2004). However, this finding is consistent with the idea that co-production is associated with perceived control and, consequently, with internal attributions (Chan et al., 2010; Hui & Toffoli, 2002; Pacheco et al., 2013).

Taken together, results from both studies indicate that companies can benefit from co-production not only in satisfactory service encounters, but also in situations when failures occur. This is because customers will take at least part of the responsibility for a failure and feel less disappointed and dissatisfied when a failure happens. Despite such consequence, it seems that the decrease in disappointment and dissatisfaction level does not happen at the expense of an increase in regret level, in view of the fact that regret levels were not affected by co-production in study 1. Considering that service failures are inevitable sometimes, these results bring important theoretical and managerial implications.

### **5.1 Theoretical implications**

The key difference between this investigation and part of previous research is that it supports the idea that service companies can benefit of co-production even when service failures occur. Previous literature had already recognized the benefits of co-production but had not addressed the positive results of co-production in failed co-produced services (for an exception see the paper of Bendapudi and Leone, 2003). In this sense, co-production may be interesting for service companies even when problems happen. The positive results are related to less external causal attributions and reduced levels of disappointment and dissatisfaction. To the best of our knowledge, only three papers (Heidenreich et al., 2015; Jong-Kuk et al., 2010; Yen et al., 2004) have directly addressed the relationship between co-production and causal locus attribution in a failure situation. However, the results of studies 1 and 2 evidence different conclusions compared to these papers.

One could argue that the present results are similar to those of Heidenreich et al. (2015) regarding the effects of causal locus attribution, but they are not. Heidenreich et al. (2015) have found negative consequences of failed co-produced services: high co-production levels were associated with lower customer satisfaction. This could be framed as a dark side of co-production, as they propose. This research shows a bright side of such failures: the reduction of customer disappointment towards the company and dissatisfaction. Bendapudi and Leone (2003) also suggested that co-production could mitigate the self-serving bias, but they advocate that this would only happen when customers were given the option to co-produce. Our results show that the reduction of the self-serving bias may happen even without this option.

To the best of our knowledge, this research is the first to show that customers who co-produce tend to attribute the responsibility for a failure more to themselves (feeling more regretful sometimes) than to the service provider. We also present evidence that customers who do not co-produce tend to attribute the failure to the company, feeling more disappointed and dissatisfied. Recent service literature argues for the importance of understanding how different emotions emerge in co-production contexts (Fliess, Dyck, & Schmelter, 2014). Following such suggestion, we try to explain how different emotions emerge in a failed co-production context.

## **5.2 Managerial implications**

Service providers should employ co-production whenever possible. Our results show that service providers are able to manage customer causal locus attributions for service failures even before their occurrence. By allowing the customer to co-produce services, companies are not only increasing the probability to have higher customer

satisfaction and perceived quality (Golder et al., 2012; Hunt et al., 2012), but also increasing the probability that customers will take some responsibility over a failed co-produced service and feel less disappointed and dissatisfied. Strengthening co-production practices is important because customer's causal locus attribution is out of the service providers' control. However, service providers may affect such attribution through something that is under their control: co-production.

From a managerial perspective, it is interesting to focus on co-production even when it increases regret through greater internal attribution, which was the case in study 2. The reason is that disappointment and dissatisfaction are better predictors of word-of-mouth than regret (Zeelenberg & Pieters, 2004). Moreover, disappointment is a better predictor of switching behavior (Zeelenberg & Pieters, 2004). Consequently, co-production could lead to less negative word-of-mouth and switching behaviors through lower disappointment and dissatisfaction levels.

### **5.3 Limitations and directions for future research**

Although study 1 brings evidence that co-production leads to higher internal attribution than no co-production in two different service contexts, it does not address all the inconsistencies found in previous literature about the effects of co-production on causal locus attribution. Future research (possibly a meta-analysis) could focus on explaining the valence (i.e., positive or negative) of the relationship between co-production and external attribution.

Regret and disappointment were investigated because they are the two emotions most closely related to decision making (Van Dijk & Zeelenberg, 2002). Further research could explore other emotions that may be relevant for a failed co-produced

service context, such as anxiety and anger. These and other negative emotions could be affected by co-production and locus attribution as well.

Finally, only three contexts were used in these studies. Although they differ in the duration of the relationship (short-term and long-term service contexts) and retail channel (online and offline), the results cannot be generalized. Future studies could extend the relationships found here to different contexts. Investigating potential moderator effects related to the type of service would also be interesting to increase the knowledge about co-production in service failures.

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