The Importance of Being Confident: Evidence from a Supply Chain Experiment

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1 Introduction

A growing number of studies in operations management suggest that psychological traits and individual cognition affect decisions taken in the business sphere (Bendoly et al. 2010), among which supply and supply chain management (Kaufman et al. 2009). To illustrate, at least since Sterman (1989), empirical research carried out through controlled human experiments has shown that the well-known “bullwhip effect” in supply chains is due to the cognitive under-weighting of goods in the pipeline. More recent studies in the field have focused, among others, on the impact of individual personality traits (Strohhecker and Größler 2013), intelligence (Narayanan and Moritz 2015), and aversion to uncertainty (Ancarani et al. 2013), showing that they are significant predictors of both individual and supply chain performance.

Since this research stream is still in the making, little attention has been devoted so far in operations and supply chain research to other broad psychological traits that cut across diverse cognitive domains such as task planning, performance monitoring, performance evaluation (Schraw et al. 1995).

One of these traits is individual self-confidence, which can be described as a feeling or consciousness of one’s power or of reliance on one’s circumstances. Previous research has shown that higher confidence is significantly and positively correlated with greater accuracy in diverse tasks (Kleitman and Stankov 2007; Stankov and Crawford 1997). In addition, more confident individuals emerge as being more risk-taking and entrepreneurial, exhibit positive attitude towards

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F. Schupp and H. Wöhner (eds.), *The Nature of Purchasing*,
Management for Professionals, https://doi.org/10.1007/978-3-030-43502-8_11

competition, participate in more networks, and are more actively involved in cooperative interactions (Pirinsky 2013). Finally, teams benefit from having an optimistic agent as leader (Wang et al. 2014). Hence, confidence not only reflects individual ability but could also be an important resource leading to better job performance.

Although supply chain research has not ignored the "confidence" of decision makers, it has focused on the negative side of self-confidence, i.e. the overestimation of one's ability, performance, and the underestimation of the variability of a possible outcome. In this light, research has highlighted the negative consequences for inventory and purchasing management of being overconfident (Ancarani et al. 2016; Ren and Croson 2013). Conversely, the potential positive aspects of self-confidence, intended as self-motivation and optimism, have so far escaped the attention of the operations management literature. In supply management problems, self-confidence may have important implications, since it may affect supplier selection processes and negotiations, inventory and material management, and generally the degree of risk-taking in the management of the supply chain.

The aim of this study is to investigate how self-confidence affects decision makers' choice of order quantities and levels of inventory, to analyse the ensuing supply chain costs within a multi-echelon, multi-period supply chain. Using supply chain experiments, forty purchasing and supply management professionals from a large multinational were invited to participate in a business game simulating a multi-echelon serial supply chain. Participants were assigned to different supply chains on the base of being either low or high self-confident individuals. Their inventories, order quantities, and costs were observed and related to their self-confidence levels.

Findings suggest that high-confident players do not anchor on current demand but rather prefer to work on a target stock. On the contrary, low-confident players follow observed demand closely when choosing their order quantity and gave rise to higher oscillations in orders and inventory.

The chapter is organised as follows: Section 2 reviews the existing psychological and managerial literature on the concept of self-confidence, highlighting applications in purchasing and supply management. Section 3 presents the experimental study design and realisation. Results are reported in Sect. 4, while Sect. 5 presents a discussion of implications for management.

2 Literature Background

The concept of confidence or self-confidence points to a comparison between actual and perceived knowledge (or information, ability, performance) of an individual. Diverse disciplines, such as psychology, finance, business economics, and strategic management, have investigated the drivers, manifestations, and consequences of self-confidence (Picone et al. 2014).

In psychology, confidence is generally investigated with respect to specific tasks and assessed by the correlation between ex-ante perception of knowledge (or prediction of performance in the task) and actual knowledge or performance. Kleitman and Stankov (2007) and Stankov and Crawford (1997) provide evidence that higher confidence in a task is significantly and positively correlated with greater accuracy in diverse tasks. Although these findings could suggest that confidence is task-related, other psychometric studies show that confidence ratings elicited from a variety of tasks tend to correlate and define a single factor (Stankov and Crawford 1997), thus suggesting the existence of a general self-confidence trait that approximates human abilities (Kleitman and Stankov 2007).

In this direction, some studies do not investigate confidence in specific tasks but assess whether people feel sure about their views or opinions about themselves or others in everyday activities. These opinions do not have a correct answer at the time of testing and, indeed, correct answers may never become available or be difficult to ascertain. Kleitman and Stankov (2007) show that these generic "sureness" scores are positively correlated with traditional in-task confidence ratings and, in turn with cognitive abilities and meta-cognitive abilities, such as awareness of cognitive resources available for planning, degree of cognitive monitoring of task performance, ex-post cognitive evaluation of performance.

In strategic management studies, self-confidence has emerged as a desirable leadership characteristic (Luthans et al. 2001). Indirect evidence on the value of self-confidence for organizational performance comes from the finding that advisors who express more confidence earn greater trust and engender more confidence in those receiving their advice (Sniezek and Van Swol 2001) and from the fact that companies are willing to pay a premium to more confident managers (Khurana 2002). Finally, leadership studies suggest that confident managers are able to benefit the organizations they manage (Chemers et al. 2000; Flynn and Staw 2004).

Most of the attention of business research on the concept of confidence has focused on the *biased* aspects, i.e. on overconfidence or *hubris* (Hayward and Hambrick 1997). Overconfidence has turned out to be one of the cognitive biases more frequently encountered in managerial behaviour (Malmendier and Tate 2005). For instance, overconfidence leads to overtrading behaviour in the stock market (Odean 1998), to the use of long-term, as opposed to short-term debt (Ben-David et al. 2013), to imprecision of forecast (Hribar and Yang 2016), and to excessive risk-taking (Li and Tang 2010; Simon and Houghton 2003).

In operations management, there is emerging evidence that overconfidence is generally tied to mistakes that maybe costly for individuals and organizations. Ren and Croson (2013) have found that overconfidence can explain the typical pattern of over/under ordering in single-echelon single-period newsvendor problems. Ancarani et al. (2016) have explored the effects of overconfidence in inventory management in multi-echelon supply chains, showing that overconfident individuals exhibit higher costs, incur more backlogs, and increase the risk of a supply chain breakdown. In the supply management field, Kaufmann et al. (2009) and Hada and Grewal (2013) suggest that purchasing managers trained to carry out risk assessment and to apply formal models tend to be overconfident.

None of these studies have looked at how the self-confidence of the supply chain manager in its everyday work activities is correlated to work performance. Therefore, currently, there is no evidence on how this general psychological trait extends to the work sphere and on how it correlates with other individual characteristics that may be of relevance for work-related outcomes.

3 Study Design and Implementation

3.1 The Decision Task and the Business Game

The focus in the empirical analysis of individual self-confidence was on order quantities and on inventory decisions within the supply chain. The business game known as the "beer game" (Forrester 1958; Sterman 1989) was adopted to exemplify a multi-echelon supply chain operating in a multi-period setting and used as the decision context for the human experiment. In the version of the game implemented in this study, each supply chain was made up of four echelons in charge of producing and distributing beer: factory, distributor, wholesaler, and retailer. Each human player was assigned to a specific role within the chain and was in contact only with the closest downstream and upstream echelon. Every echelon had a single downstream customer and a single upstream supplier. The decision task consisted of placing an order in each period of the game in order to meet customer demand. Each period, an external customer, played by the software used to implement the game, placed a demand that was observable only by the retailer. Participants have to balance costs of carrying over inventory from one period of the game to the next with shortage costs that arise when inventory is insufficient to satisfy customer's demand.

The beer game has been used extensively in research and for educational purposes to gain lessons on the benefits of an integrated approach to the management of supply chains and on the costs of foregoing coordination. The general pattern observed is fluctuations of orders and turbulence along the supply chain as result of variations in demand. The most notable phenomenon observed in the game is order variance amplification as one climbs up the layers of the supply chain, known as the bullwhip effect. The higher variance of orders observed in the upper levels of the chain is generally associated with higher costs for the echelons involved and for the chain as a whole. Therefore, the game illustrates how the dynamics of a complex system are often unpredictable even to the most experienced managers or buyers, because of the impossibility of full coordination with the other members of the chain.

The set-up of the game used in this study involved a normally distributed external demand with mean equal to 100 and standard deviation equal to 20 units. Each order sent upstream entailed a constant information lag equal to one period, while the transportation time from the supplier to the buyer was stochastic and uniformly distributed in the interval (1, 2, 3) periods. Stochastic lead times allow for order crossovers, a feature increasingly characterising global supply chains (Disney et al. 2016). Each tier had unlimited storage capacity. Each unit in inventory had a cost per period equal to 0.5 euro while shortage costs were equal to one euro per unit in shortage.

In each period of the game, players' task was to place an order upstream. All echelons simultaneously chose their order quantity for the period, which could not be modified once it was introduced in the software recording decisions. Participants were involved in two repetitions of the game, each lasting 35 periods. The first repetition allowed players to gather hands-on experience. The decisions and results of the second repetition were recorded and are analysed in the following. During the game, communication among players was strictly forbidden in order to mimic an uncoordinated supply chain. Players were instructed that their goal was to minimise the overall costs, i.e. inventory plus backlog costs, of their chain. Therefore, they were asked to achieve supply chain cost minimisation, while relying only on local information, i.e. echelon inventory (Cachon and Zipkin 1999).

In the Appendix to this chapter, Figure 1 summarises the game design, while Figure 2 shows the screenshot used to elicit participants' responses and the information available concerning the history of the game.

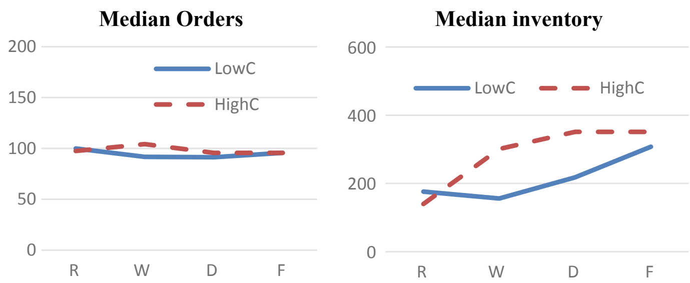
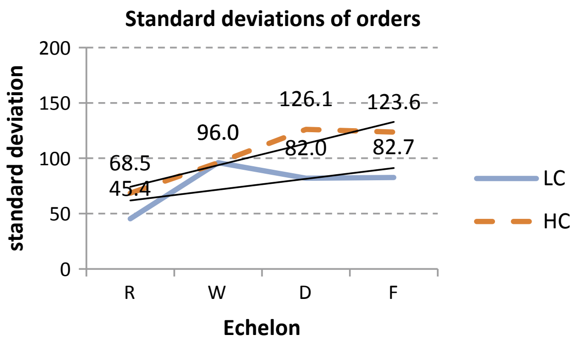


Fig. 1 Median orders and inventories (authors' own figure)

Fig. 2 Bullwhip effect (authors' own figure)



3.2 Self-confidence Measures

In order to measure self-confidence, we used a scale made up of four items and drawn from the World Values Survey, a cross-country project coordinated by the Institute for Social Research of the University of Michigan (www.worldvaluessurvey.org) (Pirinsky 2013). The four items (measured on a five-point Likert scale) were meant to identify the degree of absolute self-confidence, i.e. the way individuals perceive their own abilities, relative self-confidence, i.e. how they evaluate their abilities relative to others, and their optimism, i.e. how positively they feel about future outcomes. These three nuances match the three typologies of confidence identified in the confidence literature, namely calibration (the estimation of the variance of a relevant measure affecting performance), placement (better-than-average effect), and estimation (optimism about performance or chances of success) (Moore and Healy 2008).

The four items allowed building a composite measure of confidence with five levels (0, 0.25, 0.50, 0.75, and 1). A score of 1 indicated that the rater had a score at least equal to four on all four items of the scale; 0.75 indicated that the rater had a score at least equal to four on three items of the scale; 0.50 indicated that the rater had a score at least equal to four on two items; 0.25 indicated that the rater had a score at least equal to four on only one item; zero indicated that the rater never had a score at least equal to four. Hence, a composite score equal to one captured self-confidence in all four dimensions (absolute, relative, optimism), while a score of zero stood for self-confidence in no dimension.

In order to clearly separate the impact of self-confidence on behaviour in the inventory management game, purchasing and supply management professionals exhibiting either high self-confidence with an overall score >0.5 or low self-confidence with an overall score <0.5 were invited to take part in the beer game. Twenty low-confidence (LC) and twenty high-confidence (HC) individuals accepted to participate in the game. LC individuals were randomly assigned to LC chains (five chains), while HC individuals were randomly assigned to HC chains (five chains). Hence, each chain in the experiment was homogeneous in terms of composition, at least as far as self-confidence was concerned, and the experiment allowed to contrast differences in ordered quantities and inventory decisions by high (respectively low) self-confident individuals and chains. Figure 1 illustrates the distribution of beer game participants according to their degree of self-confidence. Average self-confidence individuals were not involved in the test in order to make the difference in the composition of the two types of chains more salient. Orders, standard deviation of orders, inventory holdings, backlogs, and costs were compared between the two groups of chains.

4 Results

4.1 Orders and Inventory: Descriptive Results

Figure 1 shows median orders (left-hand side) and median inventory (right-hand side) for all echelons. Median order is around the mean value of external demand (100 pieces) irrespective of the degree of self-confidence. This finding suggests that the provision of partial information to all echelons (namely point-of-sale demand distribution parameters) led to a strong anchoring effect on the theoretical mean of the distribution. Interestingly, this anchoring effect holds for all echelons and not only for the retailer who is in closer contact with the external customer. This result is in line with Croson and Donohue (2003), whose findings suggest that supply chain members use POS data when they are available.

The median inventory holdings are lower for LC players than they are for HC players, except for the lowest echelon. In particular, given the demand and lead time parameters, the median inventory held by HC wholesalers, distributors, and factories (≥ 300) accounts for a service level higher than 99%, while the median service level offered by LC chains is lower. However, the null hypothesis that the median inventory holdings are statistically equal for the two types of chains cannot be rejected.

The variability of orders measured by the order standard deviation (Fig. 2) shows that for all echelons except the wholesaler, the standard deviation is higher for HC players. The tendency lines show that HC chains also exhibit a slightly higher amplification of the variability of orders across echelons (bullwhip effect). Irrespective of self-confidence, median standard deviation of orders is significantly larger than the standard deviation of external customer demand (20), suggesting that the median player does not adopt a simple strategy of passing through demand received from the customer to its supplier (Sterman 1989). This is true also for retailers, who are the only actors in the chain who observed external demand in each period.

4.2 Costs

Figure 3 reports median total costs (upper panel) for each period of the game for HC and LC chains and backlog costs (lower panel) across the game.

The upper panel shows that LC chains (solid line) exhibit higher costs than HC in the first half of the game and lower costs in the latter part. A one-tail paired t-test of mean costs per period shows that costs of HC chains are statistically larger than costs of LC chains ($p < 0.042$). Mean costs per period are equal to 1665 for HC and 1449 for LC, a difference of around 15%. The lower panel in Fig. 3 shows that the HC chains exhibit lower backlog costs. The one-tailed paired t-test applied to the comparison of mean period backlog costs shows that these are statistically lower for

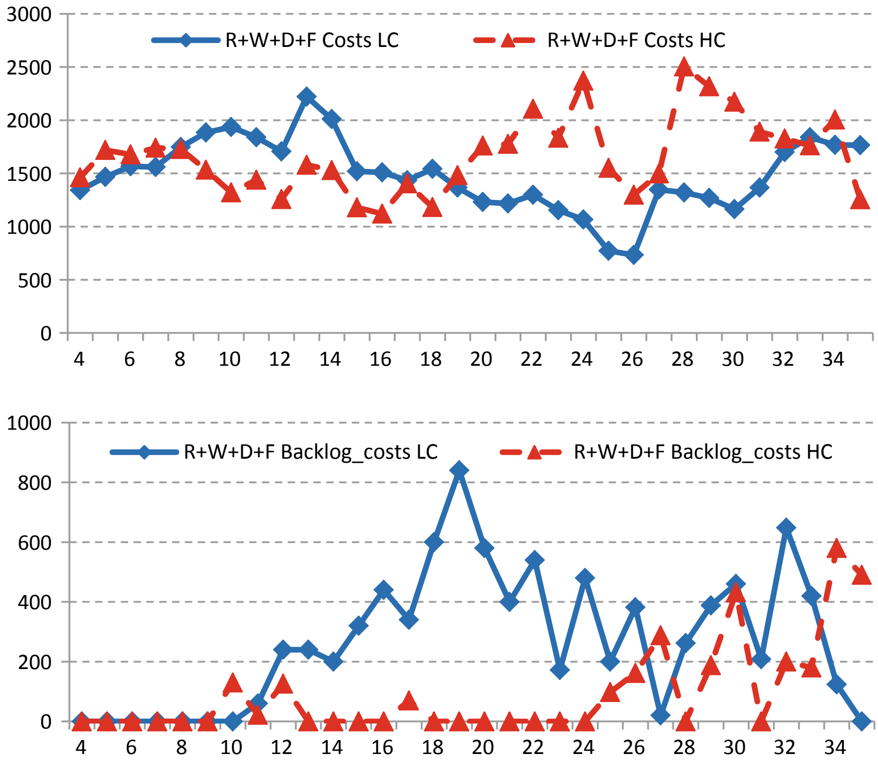


Fig. 3 Median total costs (upper panel) and backlog costs (lower panel) (authors' own figure)

HC chains ($p < 0.000$) with a mean backlog cost equal to 92.69 for HC chains and 267.63 for LC chains.

4.3 Model Estimation

With the aim to identify the decision model for order quantity at each echelon, a dynamic regression model was estimated (Eq. 1) for each echelon of the chain:

$$\begin{aligned}\text{Order}(it) = \text{Max}\{0, \alpha\,\text{Demand}(it) + \beta[\text{Target Inventory}(i) \\ - \text{Inventory on Hand}(it)] - \gamma\text{Pipeline}(it)\}\end{aligned} \quad (1)$$

where:

i = ith player in echelon considered (retailer, wholesaler, distributor, factory)
t = tth period of the game, t = 1, …, 35.

The model follows Croson and Donohue (2003) and Croson et al. (2014) and assumes that the order quantity depends on downstream demand at time t, on the difference between the desired target inventory level and inventory on hand, and goods in transit in the pipeline. The coefficient α indicates the weight assigned to customer demand when choosing the order quantity and thus captures "demand chasing" effects, β indicates the speed of adjustment of inventory on hand to the target stock, while γ indicates the degree to which players keep the work in progress into account when choosing the order quantity. When β tends to one, this indicates immediate adjustment, i.e. within one period. According to Sterman (1989), the goods in transit tend to be underestimated by the decision maker when choosing the order quantity (γ tends to zero), leading to inflated orders and inventory, higher variability of orders, and general supply chain instability. The above equation was estimated separately for HC and LC players, in order to understand whether the decision model followed by low-confidence and high-confidence players was different and in which respects.

Results (Table 1) show that LC players tend to anchor on current demand when choosing order quantities, as indicated by a coefficient for Demand(t) closer to one for LC chains for all echelons except the retailer. Full anchoring on demand would have been signalled by a coefficient equal to one. The similarity of the size of coefficients for the retailer under the two conditions depends on the fact that this echelon is the only to have access to POS demand, as explained above. Since the retailer observes external demand, anchoring on demand is plausible irrespective of the self-confidence score.

The coefficient for Inventory(t), i.e. inventory on hand, is fairly small for both LC and HC players and close to zero, although it is higher for HC players. This result indicates that, although both LC and HC players adjust orders slowly following a reduction in inventory on hand, HC players replenish inventories faster than LC players. As indicated by the higher value of the constant term, HC players prefer to work on higher target stock with respect to LC. We also observe that the target stock is higher for upstream echelons, which reflects the fact that higher echelons have to cope with greater oscillations of demand.

Finally, looking at the impact of lagged orders and goods in the pipeline, while both LC and HC players keep into account previous periods' orders, lags 3 and 4 tend to be ignored by HC players.

5 Managerial Implications

Prior operations and management studies have focused on the consequences of a self-confidence level that exceeds actual performance, showing that overconfidence in managerial settings leads to wrong forecasts and excessive risk-taking. This paper has investigated whether a general attitude of self-confidence, characterised by reliance on own abilities in absolute terms and with respect to others, and by a

Table 1 Determinants of order quantities—low and high self-confident players by role (table compiled by authors)

Expl. Vbl.	Retailer		Wholesaler		Distributor		Factory	
	HC	LC	HC	LC	HC	LC	HC	LC
Demand(*t*)	0.89	0.69	0.5	0.85	0.33	0.97	0.33	0.89
	*0.2****	*0.46*	*0.06****	*0.19****	*0.08****	*0.06****	*0.08****	*0.06****
Inventory(*t*)	−0.29	−0.06	−0.12	−0.01	−0.14	0.07	−0.11	−0.04
	*0.03****	*0.02****	*0.03****	*0.01*	*0.03****	*0.04*	*0.02****	*0.02*
Order(*t* − 1)	0.26	0.13	0.15	0.61	0.21	−0.18	0.21	0.23
	*0.06****	*0.06***	*0.06***	*0.06****	*0.06****	*0.05****	*0.06****	*0.05****
Order(*t* − 2)	−0.07	0.26	0.19	0.59	0.21	0.05	0.08	−0.07
	0.06	*0.06****	*0.06****	*0.07****	*0.06****	*0.05*	*0.06*	*0.05*
Order(*t* − 3)	−0.08	−0.04	−0.01	−0.29	−0.07	−0.14	0.11	0.18
	0.07	*0.06*	*0.07*	*0.08****	*0.07*	*0.06***	*0.07*	*0.05****
Order(*t* − 4)	0.06	0.12	−0.02	−0.15	−0.09	0.23	−0.15	0.09
	0.06	*0.06****	*0.07*	*0.07***	*0.07*	*0.05****	*0.06***	*0.05*
Target inventory (constant)	38.14	17.86	45.08	19.31	100.53	120.48	118.47	3.98
	27.02	*54.43*	*16.43****	*59.48*	*20.73****	*56.02***	*23.57****	*84.41*

Standard deviations in italics, *** significant at 99% level, ** significant at 95% level perception of optimism, is associated with superior performance in an inventory management task within a serial supply chain.

The supply chain business game implemented in this study was meant to simulate turbulent environments, in which customer demand swings are substantial, and suppliers' lead times are unreliable. This characteristic of the game marks a significant difference with respect to the "standard" game played in executive and student simulations, which generally involves a simplified environment with uncertainty in customer demand but constant delivery time (Sterman 1989). Indeed, today's business systems encompass enormous complexity, and executives must often steer global supply chains that exhibit significant supply-side risks. Therefore, this study was meant to capture this facet of uncertainty in supply chains.

Our analysis, which builds upon results in experimental psychology, has revealed that the self-confidence score is significantly related to differentiated behaviour in inventory management. Specifically, LC players have lower inventory holdings across the game, which lead to greater backlogs and to a lower customer service level. Their decision model involves chasing the current customer demand closely when choosing the order quantity. This behaviour suggests a short-sighted, short-term decision horizon, which ends up creating backlogs. However, costs per period tend to be lower in LC chains than in HC chains.

Unlike LC players, HC players do not anchor on customer demand when choosing the order quantity but work on a target stock. Inventories are replenished to the target stock more swiftly as indicated by the higher coefficient of inventory on hand. Average inventory holdings are higher, especially in the middle leg of the game, leading to low and infrequent occurrence of backlogs. Goods still in the pipeline significantly affect order quantities more often than for HC, but differences are not as clear-cut as for other explanatory variables. Overall, self-confident decision makers guarantee a smooth flow of goods across the channel, and better customer service, albeit at extra cost for the chain.

These findings suggest a number of observations that may find application in the inventory management area:

Observation 1—There is a trade-off between guaranteeing the smooth flow of goods across the supply chain and therefore managing the risk of supply interruption and costs. The decisions of self-confident individuals appear to be focused on the former, while the decisions of low-confidence decision makers seem to put more emphasis on cost reduction. Should our results be confirmed by larger-scale studies, this would imply that the self-confidence of the inventory manager is crucial in affecting this trade-off and therefore in influencing firm's costs and customer satisfaction.

Observation 2—Vis-a-vis a lower handling cost per period (about 15%), the inventory management strategy followed by low-confidence decision makers generates significantly lower service levels. By anchoring on current demand, low self-confidence players tend to "react hard", generating turbulence in the system through higher backlogs. Hence, low self-confident individuals may be unfit to manage new and uncertain situations characterised by high risk of supply disruption, unless previously trained. As a corollary to this, high-confidence players that work by constantly adjusting inventory to the target stock are better fit to handle turbulent situations.

Observation 3—The way self-confident teams achieve a better service level is not by avoiding stock-outs altogether but by allowing for a moderate risk of stock-out, suggesting that high self-confidence is also tied to the ability to manage risk.

Finally, the self-confidence score emerges as a good proxy of chain performance and may be used by management to approximate subordinates' self-esteem, belief in own capabilities, and motivation. In this respect, results bear relevance for processes of human resource selection and for training programs aimed at "de-biasing" incorrect attitudes (Kaufmann et al. 2009).

6 Limitations and Future Research Directions

Results from this small scale supply chain experiment have given insights into the relation between perceived confidence and performance in managing inventory across the chain. However, some limitations, which future research may address, must be acknowledged. First, the small sample size has severely limited our ability to undertake hypothesis testing based on the comparison between low and high self-confidence chains. Next, results refer to chains that exhibit extreme values (either low or high) of self-confidence and do not include individuals exhibiting an average self-confidence level. Finally, the analysis has not investigated the relation between other characteristics that are typically related to self-confidence, such as personality traits and demographics, and inventory management.

Overcoming these limitations generates a rich future research agenda. First, we plan to undertake larger-scale experiments that include treatment effects that allow testing how high/low-confident individuals react to different scenarios in terms of volatility of demand and costs. To date, most beer game experiments have been carried out using a standard ratio for stock-out cost to inventory holding costs equal to 2. However, in several industries, this ratio may be unrealistically low. In addition, according to the buyer–supplier power relation, stock-outs may entail a loss of reputation for the supplier and a potential loss of business. Another extension of the research that goes in the direction of collecting a larger sample includes recruiting participants and running the experiment on the Web. This extension would permit collecting information from a larger set of companies, thereby allowing the incorporation of a treatment effect for industry or company culture.

Next, it would be of interest to explore the performance of supply chain teams that are diverse in terms of the self-confidence of their members. Given that a full exploration of the performance impact of different combinations of self-confidence in a multi-echelon chain would require a large number of experimental data points, human experiments could be augmented with computer simulation experiments.

Third, since the experiment has been conducted in a setting that does not allow coordination among supply chain echelons, it would be of interest to compare this set-up with a chain in which coordination is allowed. Providing players with coordination opportunities would allow the exploration of whether an optimisation strategy that complements both, limiting inventory and no backlog, can be achieved.

Finally, it would be interesting to explore whether outcomes for the two groups depend on the incentive provided in the experiment, specifically the goal to minimise supply chain costs. Comparison of results with a new experimental treatment in which the objective is to minimise the own echelon's costs would allow assessing whether in the current experiment players are actually able to use "system thinking" and optimise for the entire chain.

Appendix

See Figs. 4 and 5.

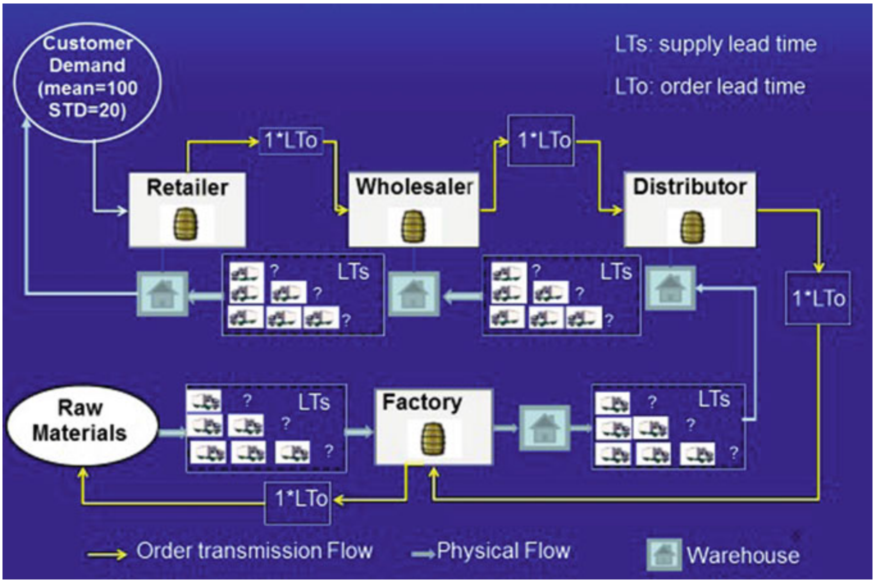
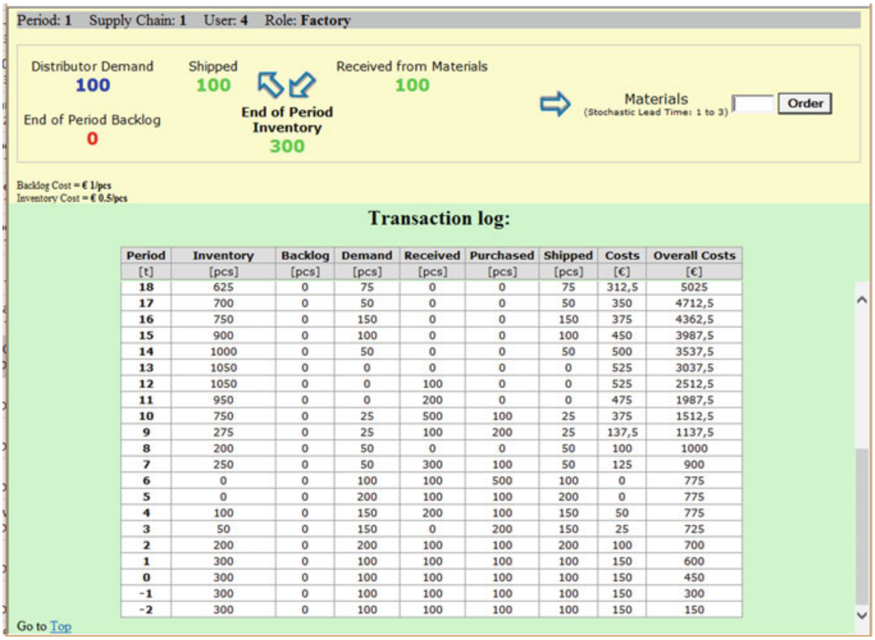


Fig. 4 Game design (authors' own figure)



Period [t]	Inventory [pcs]	Backlog [pcs]	Demand [pcs]	Received [pcs]	Purchased [pcs]	Shipped [pcs]	Costs [€]	Overall Costs [€]
18	625	0	75	0	0	75	312,5	5025
17	700	0	50	0	0	50	350	4712,5
16	750	0	150	0	0	150	375	4362,5
15	900	0	100	0	0	100	450	3987,5
14	1000	0	50	0	0	50	500	3537,5
13	1050	0	0	0	0	0	525	3037,5
12	1050	0	0	100	0	0	525	2512,5
11	950	0	0	200	0	0	475	1987,5
10	750	0	25	500	100	25	375	1512,5
9	275	0	25	100	200	25	137,5	1137,5
8	200	0	50	0	0	50	100	1000
7	250	0	50	300	100	50	125	900
6	0	0	100	100	500	100	0	775
5	0	0	200	100	100	200	0	775
4	100	0	150	200	100	150	50	775
3	50	0	150	0	200	150	25	725
2	200	0	200	100	100	200	100	700
1	300	0	100	100	100	100	150	600
0	300	0	100	100	100	100	150	450
-1	300	0	100	100	100	100	150	300
-2	300	0	100	100	100	100	150	150

Fig. 5 Screenshot of data available to participants (authors' own figure)

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