The consequences of squeezing truckers

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Abstract

The increase in stakeholder pressure for responsible business is now triggering a higher public awareness of buyer's abusive power (BAP). BAP occurs when a powerful buyer appropriates greater value at the expense of their suppliers. In this study, we examine such an exploitative relationship in the context of the trucking industry. By building on a multiple theoretical approach, and based on data collected from 260 independent truckers, and we elaborate on how BAP causes the individual truckers to engage in an unpleasant situation, deteriorating their wealth and safety.

Keywords: Buyer's abusive power, Supplier welfare, Buyer-supplier relationship

Introduction

With the advent of responsible business, exploiting suppliers has now received a great deal of attention from multiple stakeholders. This growing attention is reflected in a series of headlines in recent years. Perhaps, the most well-known example would be that of Wal-Mart (Sit, 2017). This retail giant often sets up increased pressure on their vast network of suppliers in order to protect their profit margins, or to keep the margin high (Boyle, 2017). However, whether squeezing actually hurts suppliers is debatable; some provide evidence on the positive impact of buyer power (e.g., Huang et al., 2012), whereas others reveal its negative consequences such as lower profitability benefits (e.g., Lanier et al., 2010). The consequence of squeezing supplier seems to be a two-sided.

However, in this study, we focus on the negative impact of squeezing supplier, in which the relationship produces outcomes that are not mutually compatible. We argue that this negative impact is a result of buyer's abusive power (BAP) that is something "intolerable" or "irritating" in the buyer-supplier relationship (Abosag et al., 2016). This concept is thus in line with the view of buyer's exploitative behavior that misuses power over their suppliers, and thus is unacceptable for stakeholders from both the economic and moral viewpoints (Schleper et al., 2017). Consequently, BAP differs from its positive

side of buyer power, in which each party in the supply chain can collectively achieve superior performance over their counterparts.

One area which is pervasive in terms of squeezing supplier is the trucking (motor carrier) industry. The Teamsters Union, the champion of freight truck drivers in North America, has argued that "we stop squeezing our truck drivers like lemons", as it drags down the trucker's profit margins that might be associated with diminished road safety (Lacroix, 2017). This practical issue is also the case in many other nations where deregulation – which can create a full of independent truck drivers in the industry – has achieved. For example, trucker drivers in South Korea often feel forced into speeding and overloading due to the incompatible requirements of service buyers (Liem, 2016). Moreover, because of the unfair delivery rate set by large corporations who subcontract the delivery work, truck drivers are paid less than the minimum wage, thus forcing them into "sweatshops on wheels".

Prior studies in the field of buyer-supplier relationships have mostly focused on performance implications that accrue to buying firms (e.g., Griffith et al., 2006; Wagner et al., 2011; Chae et al., 2017). In contrast, relatively little attention has been given to supplier welfare of the relationship (Huang et al., 2012). More importantly, despite the practical, social significance noted above, there is a dearth of research into this aspect in the trucking industry. In this study, supplier welfare is defined as "comprising health, safety, and quality of life issues such as wages, benefits, and working conditions" (Pagell and Gobeli 2009: 284). Building on this definition, for the purpose of this study, we examine the following research question: *how detrimental is BAP to the wealth and safety of an owner-truck driver*? In many cases, the national economy relies on millions of trucks and its drivers (Kemp et al., 2013; Prockl et al., 2017). Thus, research in this area has the potential to be quite fruitful.

To answer the research question, we conduct an empirical study, based on survey data collected from 260 independent truckers in South Korea. In this study, we view the truckers as service suppliers who provide a delivery for their buyers (Cruz, 2016), and then examine the corollaries of squeezing truckers in the context of exploitative buyer-supplier relationships. As our theoretical foundation, we rely on the principles of power imbalance (Cook and Emerson, 1978), risk taking (Kahneman and Tversky, 1979), and safety disconnect (Das et al., 2008) theories. We combine these theoretical views to better address a complex phenomenon associated with the buyer-supplier relationship (Wagner et al., 2011). Building on this multiple theoretical approach, we elaborate on how BAP not only makes the trucker drivers difficult to gain deserved benefits but would also cause them to engage in a risky situation, where they are vulnerable to crashes.

Background

As noted earlier, supplier squeezing-related topics have been discussed with a view of two-sided coins. Some studies have revealed its negative consequences on supplier welfare (Bloom and Perry, 2001; Lanier et al., 2010; Kim, 2017), while others have produced its positive impacts (Huang et al., 2012; Patatoukas, 2012; Noto and Elberg, 2016). Some others studies have also found the insignificant association (Mottner and Smith, 2009; Hofer et al., 2012). For our purpose, however, we delve into the negative impact of squeezing suppliers.

In the literature, two types of the buyer-supplier relationship have been discussed: arm's length and cooperative (Dyer and Ouchi, 1993; Wagner and Boutellier, 2002). The former approach is a traditional view of buyer-supplier relationships (discrete exchange), advocating maximizing buyer's bargaining power. The latter approach is a partnership-like buyer-supplier relationship (relational exchange), and thus pursues mutual value

creation (i.e., expanding the "pie") between the parties. Here, one key question is: which approach is superior for? With the use of a sample of 453 buyer-supplier relationships, Dyer et al., (1998) found that there is no "one-size-fits-all" strategy. Indeed, firms should think more strategically about buyer-supplier relationships, and therefore consider a more contingent approach (Wagner and Boutellier, 2002).

Note that again, in this study, we focus on the negative impact of squeezing supplier. This dark side in business exchange stems from when buyers will have an incentive to exploit their suppliers with the short-term perspective (i.e., the arm's length approach) (Anderson and Jap, 2005). Schleper et al. (2017) argued that those buyer's actions would be "unethically exploitative" if they gain benefits at the supplier's expense through unfair price reductions. In this sense, BAP can also boil down into moral and/or ethical issues in buyer-supplier relationships. In our view, this unethical issue is especially the case for the trucking industry, where the size of individual truckers is too small to expand their own market share, to bargain with more powerful buyers, and thus to be vulnerable to exploitative buyer-supplier relationships.

Trucking has played a vital role in boosting the economy. In the United States, for example, truck delivered about 70% of total freight tonnage in 2013 alone – the value of freight moved by truck was US$ 820.0 per ton, which is even more than twice that of other modes such as rail (US$ 310.5) and water (US$ 351.4) (DOT, 2015). This is also the case for the European counterpart, where most of the European Union relies heavily on road transportation when it comes to moving freight (Eurostat, 2016). Indeed, road is a dominant mode in the flow of goods across the supply chain, especially in the flow downstream toward the customer such as retailers and consumers (McKinnon, 2006).

However, there is a flip side to that coin. In most countries, where road freight is a dominant method of shipping goods, the trucking industry is highly competitive. This nature of the market has often led powerful buyers to use its position advantage at the expense of their weaker suppliers (truckers). It may then also lead to the buyer's unfair practices, forcing the suppliers to work in sweatshop-like conditions. There is much evidence on this even in developed countries. For example, by drawing on interviews, Kemp et al. (2013) found that US truckers are placed in stressful situations where they have to satisfy incompatible demands from service buyers. These role conflict and ambiguity were then found to be associated with emotional exhaustion, negatively affecting their retention. Prockl et al. (2017) also found that financial (e.g., profitability) and nonfinancial (e.g., working conditions) job properties are significantly associated with German truckers' job satisfaction, and therefore retention proneness.

Things are not much different in South Korea, which is the context of this study. Many Korean truckers are treated as independent contractors under the name of "jeeip" (Lee and Kim, 2017). Under this system, individual trucker drivers can run their own business even with only one truck. They are thus paid not a wage, but based on a transportation rate set by channel leaders, i.e., buyers (Liem, 2016). This system is ineffective in the sense that it leads to an oversupply of trucks in the market. The "jeeip" system also makes the market inefficient, given that multi-level transactions are allowed to exist. In South Korea, transactions often involve more than three phases to individual truckers, pushing the rate down. Consequently, intense competition is inevitable in the market. This forces owner-truck drivers to work for less than the minimum wage, and to engage in unsafe driving practices.

Theory and Hypotheses

Power is one of the most prominent research topics in terms of social exchanges (Cook and Emerson, 1978). Power is often defined as "A has power over B to the extent that he

can get B to do something that B would not otherwise do." (Dahl, 1957). Therefore, in the buyer-supplier context, power is one party's ability to influence the other party. BAP can occur if the influencing party use their power advantage to coerce the influenced party to do what they would otherwise not do. This is especially likely when a supplier complies with more powerful buyers' requests for fear of losing the contract. Building on the principles of power imbalance between buyer and supplier (trucker), we posit the H1-2 hypotheses shown in Figure 1.

There has been many scholarly efforts to examine the wealth-safety association. For example, logistics scholars have argued and found that motor carrier wealth is a major determinant of their safety (e.g., Miller and Saldanha, 2016). However, they are not alone in trying to understand the linkage. Operations management (OM) scholars have also tried to look at the relationship, linking safety/health issues to organizational wealth (e.g., Pagell and Gobeli, 2009). In this study, we draw on risk taking (Kahneman and Tversky, 1979) and safety disconnect (Das et al., 2008) theories to posit the H3-6 hypotheses shown in Figure 1.

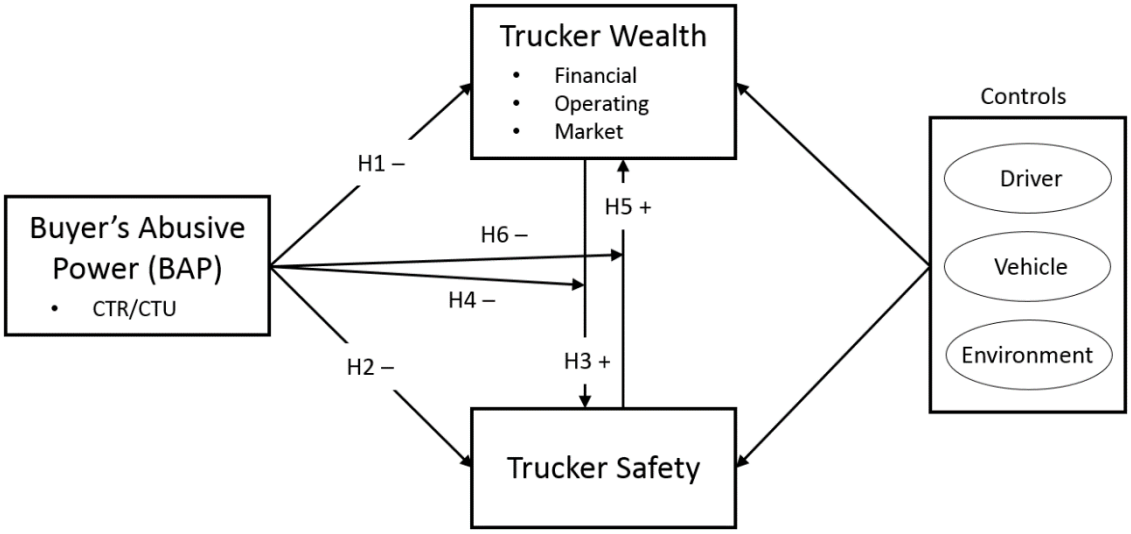

Figure 1 Research Framework

Methodology

Data and Sample Description

The target population is independent trucker drivers in South Korea, where over 90% of all freight transportation is carried by road (truck). Data were collected in January 2017. We conducted a face-to-face survey of the truck drivers at five major truck stops – Busan, Changwon, Seoul, Incheon, and Mokpo – throughout the country. Specifically, we approached each truck driver and asked if they would be willing to participate in the survey in exchange of candy for refreshment. As a result, 266 questionnaires were obtained. Among them, six were found to be uncompleted, leaving a total of 260 cases.

Measures and Validation

To test our hypotheses, we developed a survey instrument. A total of 28 items were selected based on both the extant literature and opinions from industrial experts. Specifically, our survey instrument included 8 items pertaining to current BAP in South Korea, and 10 items for measurement of supplier (trucker) welfare. They are presented in Appendix. The rest 10 items were employed to account for the differences in the characteristics of trucker drivers' operations (cf. Table 2).

This study measures supplier welfare by considering both trucker's wealth and safety (Pagell and Gobeli, 2009). Trucker's wealth is often measured by financial performance (FP). Following prior studies (e.g., Jin et al., 2017), we use operating margin as its proxy. This ratio is a suitable measure for this study as it takes into account variable costs, such as fuel and repairs. We define this as 1 – operating ratio (expenses/income, on a monthly basis). However, this is only a fragmentary measure. As a "service supplier", truckers' performance should also be evaluated based on how they efficiently meet their customer demands (Stank et al., 1999). This view led us to further consider operating (OP) and market (MP) performance. In this study, both OP and MP are an adaptation of Saldanha et al. (2013). Factor analysis supported a two-factor structure. Cronbach α for both OP and MP were 0.63 and 0.81, respectively (see Appendix).

This study also uses safety rate as a proxy for truck driver's safety performance (SP). Following prior studies (e.g., Morrow and Crum, 2004), we define this ratio as the number of accidents over total miles driven (experienced for the last two years). In this study, for better interpretation, we express safety rate on a per 10,000 miles basis, which is then reverse coded (i.e., a greater score represent greater performance).

No established measures of BAP were available. We thus developed items for BAP based on qualitative information derived from exploratory field research. We conducted semi-structured interviews with several service buyers (two shippers) and providers (eight trucker drivers). With the knowledge gathered, we developed and refined the ten items associated with current BAP. These items were then reviewed by five experts in the field, including researcher, policy maker, and lawyer. Through this process, several changes in wording were made and two items were eliminated, leaving eight items for measurement of BAP (five contract-related, CTR, and three contract-unrelated, CTU). This was measured using a five-point Likert scale ranging from "never" to "always". A two-factor structure was observed and a Cronbach α of 0.86 for CTR and 0.74 for CTU (see Appendix). Descriptive statistics and correlations of the hypothesized constructs are presented in Table 1.

Table 1 Descriptive statistics and correlation matrix

Variable	Mean	SD	1	2	3	4	5
1. FP	0.46	0.30					
2. OP	3.21	0.66	–0.02				
3. MP	2.76	0.58	0.04	0.14^{*}			
4. SP	0.40	0.99	0.06	$–0.27^{***}$	$–0.16^{**}$		
5. CTR	2.79	0.67	$–0.11^{+}$	$–0.19^{**}$	$–0.33^{***}$	0.01	
6. CTU	2.48	0.69	–0.03	$–0.29^{***}$	$–0.21^{**}$	0.22^{***}	0.50^{***}

Note: $n = 254$. $^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Results

BAP's impact on supplier welfare (H1-2)

Hypotheses 1 and 2 posit a negative impact of BAP on supplier welfare. Table 2 reports our results. Specifically, CTR was found to be significantly associated with FP and MP, while CTU was not. Trucker's OP was only influenced by CTU. When considering H2, we found that CTU is only the factor predicting SP. This evidence provides a partial support for hypotheses 1 and 2.

BAP's impact on welfare-safety (H3-4)

Hypothesis 3 posits a positive impact of trucker wealth on their safety. Hypothesis 4 posits that BAP moderates the relationship: the positive wealth-safety linkage will be weaker when BAP is high. To test these, we employed hierarchical regression analyses,

Table 2 Results of regression analysis for testing H1-2

Variable entered	Model 1: Controls				Model 2: Main effects			
	FP	OP	MP	SP	FP	OP	MP	SP
Constant	0.650**	2.776***	3.697***	–0.711	0.777***	3.322***	4.400***	–0.438
Driver-related								
Gender	0.042	0.218	–0.138	1.137**	0.051	0.228	–0.084	1.112**
Age	0.001	0.008	–0.005	–0.005	0.001	0.006	–0.007	–0.006
Education	–0.001	–0.037	–0.090	–0.201*	0.002	–0.026	–0.071	–0.198*
Avg. working time	–0.022**	–0.026	–0.013	–0.017	–0.022**	–0.019	–0.009	–0.010
Industry experience	–0.087**	–0.014	–0.093	0.097	–0.083*	0.033	–0.056	0.140
Vehicle-related								
1.2- ~ 4.5-ton truck[a]	0.073	–0.223*	–0.169+	–0.165	0.076	–0.147	–0.118	–0.085
0.5- ~ 1.0-ton truck[a]	0.072	–0.311*	–0.410**	–0.416+	0.080	–0.252+	–0.350**	–0.371+
Vehicle age	0.005	0.018	0.006	–0.036*	0.005	0.019+	0.004	–0.034*
Environment-related								
Unionization	0.001	–0.047	0.128	0.154	0.004	–0.046	0.139	0.139
Non-jeeip vehicle[b]	0.007	0.082	–0.073	0.098	0.007	0.061	–0.085	0.073
Both methods[b]	0.060	–0.043	–0.237*	–0.365*	0.064	–0.013	–0.208*	–0.341*
>= 2-step[c]	0.007	0.213+	0.005	0.138	0.007	0.144	–0.029	0.055
Don't know[c]	0.050	–0.005	–0.044	0.075	0.052	–0.015	–0.041	0.057
Predictor: BAP								
CTR					–0.067*	–0.042	–0.261***	0.149
CTU					0.023	–0.220**	–0.031	–0.321**
Observations	251	252	253	253	251	252	253	253
F for the model	2.098*	2.362**	1.866*	3.981***	2.131**	3.246***	3.699***	4.271***
R^2 (%)	10.32	11.43	9.21	17.80	11.97	17.10	18.97	21.28
Adjusted R^2 (%)	5.40	6.59	4.28	13.33	6.35	11.83	13.84	16.30

Note: Referent categories are [a]>= 5-ton truck, [b]jeeip vehicle, and [c]<= 3-step;
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

as shown in Table 3-5. While controlling for the effect of driving characteristics (driver-, vehicle- and environment-related controls), the supplier wealth factors (FP, OP and MP) were entered into the regression (Model 1). The two moderators, CTR and CTU, were then entered as a block in Model 2, followed by the mean-centered interaction terms in Model 3. As Table 4 reveals, we found no evidence on the relationship between FP and SP, and on the moderating impact of BAP on that linkage. Table 5, however, indicates that OP has a positive impact on SP, in which the linkage is moderated by the both BAP measures. The OP-SP linkage is weaker when CTR is high, while this is still stronger for higher CTU. Finally, we found evidence on the significant relationship between MP and SP, as shown in Table 6. However, CTU was only found to be significantly associated with that positive MP-SP link ($p < 0.10$). Taken together, this evidence provides only a marginal warrant for hypotheses 3 and 4.

Table 4 Results of regression analysis for testing H3-4 (FP)

Variable entered	Model 1	Model 2	Model 3
Constant	–1.031	–0.822	–0.786
Main effect			
FP	–0.067	–0.036	–0.027
Moderator: BAP			
CTR		0.168^{+}	0.147
CTU		-0.352^{***}	-0.341^{***}
Interaction effects			
FP × CTR			0.657
FP × CTU			–0.478
Driver-related	Yes	Yes	Yes
Vehicle-related	Yes	Yes	Yes
Environment-related	Yes	Yes	Yes
F for the model	4.172^{***}	4.610^{***}	4.236^{***}
F change	0.112	6.350^{**}	1.184
R^2 (%)	19.84	23.97	24.73
Adjusted R^2 (%)	15.08	18.77	18.89

Note: $n = 251$; dependent variable = SP.
$^{+}p < 0.10$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Table 5 Results of regression analysis for testing H3-4 (OP)

Variable entered	Model 1	Model 2	Model 3
Constant	-1.670^{*}	-1.438^{*}	-1.370^{+}
Main effect			
OP	0.348^{***}	0.307^{***}	0.349^{***}
Moderator: BAP			
CTR		0.162^{+}	0.090
CTU		-0.257^{*}	-0.208^{*}
Interaction effects			
OP × CTR			-0.246^{*}
OP × CTU			0.394^{**}
Driver-related	Yes	Yes	Yes
Vehicle-related	Yes	Yes	Yes
Environment-related	Yes	Yes	Yes
F for the model	4.964^{***}	4.872^{***}	4.991^{***}
F change	14.970^{***}	3.494^{*}	4.715^{**}
R^2 (%)	22.67	24.91	27.83
Adjusted R^2 (%)	18.11	19.79	22.25

Note: $n = 252$; dependent variable = SP.
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Table 6 Results of regression analysis for testing H3-4 (MP)

Variable entered	Model 1	Model 2	Model 3
Constant	–1.490*	–1.414+	–1.281
Main effect			
MP	0.211*	0.222*	0.247*
Moderator: BAP			
CTR		0.207*	0.143
CTU		–0.314**	–0.278**
Interaction effects			
MP × CTR			–0.230
MP × CTU			0.374+
Driver-related	Yes	Yes	Yes
Vehicle-related	Yes	Yes	Yes
Environment-related	Yes	Yes	Yes
F for the model	4.037***	4.321***	4.083***
F change	4.098*	5.289**	1.909
R^2 (%)	19.19	22.66	23.90
Adjusted R^2 (%)	14.44	17.41	18.05

Note: n = 253; dependent variable = SP.
$^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

BAP's impact on safety-welfare (H5-6)

Hypothesis 5 and 6 posit that supplier safety (SP) has a positive impact on wealth (FP, OP and MP), but that positive linkage is weaker when BAP is high. Our non-tabulated test results revealed that SP is only significantly associated with OP and MP. There was an insignificant relationship between SP and FP. Furthermore, we found that neither of the BAP measures (i.e., CTR and CTU) moderate the positive linkage between SP and OP/MP. This empirical evidence provides a partial support for hypothesis 5, but does reject hypothesis 6.

Conclusion

This study focuses on the negative impact of squeezing suppliers in the context of the trucking industry. Despite recent media attention and increased levels of public concern, BAP has been neglected in supply chain research. In particular, the question of how detrimental BAP is to supplier welfare has received less attention in the literature. Using a multiple theoretical approach, and based on survey data collected from independent truck drivers in South Korea, this study elaborates on the corollaries of squeezing truckers, forcing them into engage in an unpleasant situation that deteriorates their wealth and safety. National commerce relies on road freight transportation, where millions of truck drivers play a significant role (Kemp et al., 2013; Prockl et al., 2017). The results of this study thus provide far-reaching implications.

This study offers a number of contributions. First, this study is the first to extend the concept of BAP into the trucking industry, where squeezing supplier is prevalent but has been overlooked in the literature. Second, prior studies are often limited to large firms in terms of a buyer-supplier context (i.e., large-firm bias). This study overcomes this aspect by using a sample of micro-suppliers: individual truckers. Third, most of prior studies see supplier welfare as profitability (e.g., Bloom and Perry, 2001), while this study extends this view by adding OP, MP and SP issues of the supplier. Fourth, this study provides evidence on the impact of safety on trucker's welfare, in which the linkage is promising (Pagell and Gobeli, 2009) but neglected in the logistics literature. Finally, this study examines the corollaries of squeezing trucker within an Asian context, to which attention should be more called (Kim and Wagner, 2018).

Appendix. Measures used in this study

Buyer's abusive power (BAP)
Contract-related (CTR) (α = 0.855)
Unfair price decision (0.826)[a]
Unprovoked delays in payment (0.829)[a]
Unilateral reduction in price (0.770)[a]
Arbitrary contract cancelation (0.699)[a]
Coercive freight service contract (0.674)[a]
Contract-unrelated (CTU) (α = 0.774)
Request for money and valuables (0.831)[a]
Unwarranted interference in management (0.814)[a]
Non-agreed cost pass-along (0.745)[a]
Trucker welfare
Financial performance (FP)[b]
Average monthly work-related income
Average monthly work-related expenses
Operating performance (OP) (α = 0.634)
Reliable delivery of products compared to your objectives (0.853)[a]
Responsiveness to special delivery requests compared to your objectives (0.848)[a]
Market performance (MP) (α = 0.808)
Market share compared to your competitors (0.771)[a]
Market share compared to your objectives (0.802)[a]
Sales growth compared to your competitors (0.801)[a]
Sales growth compared to your objectives (0.808)[a]
Safety performance (SP)[c]
Number of accidents while working over the last two years
Average miles driven per week over the last two years

Note: [a]factor loading; [b]FP = 1– (income/expenses);[c]SP = – (number of accidents/total miles driven).

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