



Consumer demand information as a re-balancing tool for power asymmetry between food retailers and suppliers

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Abstract

This conceptual paper presents a model that may be used to redress the power balance between retailers and suppliers in the supply chain through better information symmetry and mutual dependence. It explores power dependence and resource dependence theories to conceptualise the use of demand information, by drawing on the diverse viewpoints within the extant literature on the effect of supply chain power asymmetry on exchange relationships and mutual dependence. Co-optation adds stability and reduces uncertainty through the exchange of resources. The dynamic nature of relationships and power between retailers and suppliers requires a multi-theory approach to identify a robust understanding of the interplay of different influence factors. This study has both operational and strategic implications for the food supply chain, as power asymmetry in relationships affects sustainability, especially in sales promotions periods for both retailers and suppliers. Improving power equilibrium between the buyer and supplier through information symmetry with the integration of power and resource dependence theory is novel.

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Introduction

Power is the property of social relation and therefore lies in the dependency between actors. Assessment of this dependency reveals that these relationships are affected by control of valuable resources (Emerson, 1962). If the actors jointly share these resources, it will reduce the imbalance between the relationships. This will increase reciprocity in relations resulting in even distribution of rewards for all actors. However, there are different levels of dependencies thus requiring different balancing operations to stop relationships from becoming unstable in the long term (Pfeffer & Salancik, 1978).

Power asymmetry is a major subject in supply chain relationship management discourse (Yang *et al.*, 2018; Wang *et al.*, 2016; Hingley *et al.*, 2015; Cox & Chicksand, 2005). However, there is a lack of research agreement as to why and how to redress such power imbalance and to what effect (see Naude & Buttle, 2000 and Svensson, 2001 for typical opposing views on the role of power in supply chain relationships), as some consider this asymmetry to be an inherent part of the business transaction; whereas others authors have treated this power asymmetry as opportunism by retailer. Consideration of the extant literature reveals two dominant schools of thoughts as to how rebalancing power asymmetry ought to be approached (see Tables 1 and 2 for examples of studies that follow one or the other positions for their respective enquiry).

One strand of the literature posits that power dependence is a major cause of instability in supply chain relationships and steps must be taken to redress the imbalance to the advantage of the weaker party (Yang *et al.*, 2018; Maglaras *et al.*, 2015; Nyaga *et al.*, 2013). The alternative school of thought is that the presence of a powerful partner adds stability with resources, and a weaker partner should adjust to living with the pertaining arrangement (Hingley *et al.*, 2015; Cox & Chicksand, 2005). Despite the considerable contributions made by the key proponents of these contrasting schools of thought, power asymmetry between suppliers and retailers (Hingley, 2005a; Hingley, 2005b; Belaya & Hanf, 2009) continues to impinge on the risk exposure and success of supply chain stakeholders within the food industry (Hingley, 2005a).

Resource dependence theory suggests that power is not a zero-sum game and dependencies should be managed in organizations to reduce uncertainty and to improve autonomy (Pfeffer & Salancik, 1978). One possible tactic can be to co-opt and look for alternatives. This includes agreeing to joint objectives of knowledge and resource sharing. This will reduce the transaction costs for the organizations and also decreases the propensity to be exploited by power actors. Whereas power dependence theory considers relations as part of power sharing and its imbalances affects resource access.

As retailers and suppliers relations and their access to the resources are an integral part of the food supply chain, hence these two theories plays an important part in explaining the interplay of these factors. Based on two important organizational behaviour theories (power dependence and resource dependence, the paper will investigate: 1) How the power of retailers (due to better access to the resource) affects relationship management with the supplier. 2) What set of conditions could prevail between suppliers and retailers so that the advantage gained by one partner is not at the expense of the other? 3) What set of tools or resources are available to suppliers (especially small food suppliers) to create mutual benefit (win-win situation) for both actors in the supply chain?

This paper contributes to the discourse around power and dependence by conceptualising the use of consumer information (shopper demand) as a critical set of tactics to be explored by food retailers and suppliers, especially small food supplier in the UK to redress power asymmetry with powerful retailers for mutual benefit. This context is important as food chains are more vulnerable to wastes (shorter product shelf lives) due to power asymmetry. The UK food industry is chosen for the focus/ exemplar of the paper, as it is (typically for mature developed economies) dominated by a small handful of big chain retailers, and these exercise considerable buying power over small food suppliers. Tesco is one such example, being the largest retailer in the UK it has access to a huge database of 1.4 million consumers (Malik *et al.*, 2019). It uses insights from this to plan and execute sales which are targeted and sustainable. If cooption will occur the small food suppliers will benefit from this knowledge and a better power equilibrium can be achieved.

This paper argues for a reconfiguration of supplier-retailer relationships that facilitates mutual utilization of resources that will not only improve the power balance for the weaker partner but also benefit the powerful partner by increasing its profit in that category, and reduce the waste (both in terms of value and volume) along the supply chain.

This position represents an integration of the tenets of organisational behaviour theories (power dependence and resource dependence theory). Specifically, these theories explain why and how power exercised by one partner (due to resources and size) in a relationship of mutual dependence can be countered by balancing operations by a weaker partner (Emerson, 1962). This re-balancing of power may be achieved by better utilisation of resources, through increasing investment and reducing costs (Davis & Cobb, 2010; Pfeffer & Salancik, 1978).

To address these research questions, the paper creates a conceptual framework by first reviews the literature on power and relationships with special emphasis on the retailer-supplier supply chain context. Thus,

highlighting gaps around the balance of power, access to resources and proposed strategies to counter it. This is followed by a conceptualization on how power asymmetry can be balanced for mutual benefits by drawing on consumer information (shopper demand) as a critical data set to enable suppliers to manage mutual dependence. Discussions and implications of the theoretical propositions and a developed model are made, and recommendations then presented.

1. Conceptual model

1.1. Power and supply chain relationships

The extant literature on relationships and power among suppliers and retailers depicts critical issues of interest to management researchers and practitioners of supply chain management and business research (Kähkönen, 2014; Wang *et al.*, 2016; Maglaras *et al.*, 2015). One stream contends that a supplier-retailer relationship is characterised with conflicts and opportunism where powerful retailers are using this relationship of mutual dependence to their advantage (Chung *et al.*, 2011; Viitaharju & Lähdesmäki, 2012). They are believed to exploit these relationships by compelling suppliers to bear the costs of doing business with them, with attendant punitive actions such as delayed payments and unsold stock penalty costs (Caniëls & Gelderman, 2007; Croson & Donohue, 2006). It is worth noting that the lack of a cooperative position that may allow a rebalancing of power asymmetry, has been articulated in leading supply chain and management journals over a long period as shown in Table 1 below.

Table 1 - Power imbalance inimical to the weaker partner–rebalancing power asymmetry imperative

Author	Title	Journal	Findings
Kähkönen (2014)	The influence of power position on the depth of collaboration	<i>Supply Chain Management: An international journal</i>	Power influences the depth of collaboration, which is minimal if the actors do not have balanced power positions
Bowman, Froud, Johal, Leaver & Williams (2013)	Opportunist dealing in the UK pig meat supply chain: Trader mentalities and alternatives	<i>Accounting Forum</i>	Buyer-led organizations have strong supermarket chains who have the power to capture processor and producer margins
Nyaga, Lynch, Marshall & Ambrose (2013)	Power asymmetry, adaptation and collaboration in dyadic relationships involving a powerful partner	<i>Journal of Supply Chain Management</i>	Power imbalances affect suppliers' behaviours and operational performances along with relationships in a supply chain
Viitaharju & Merja Lähdesmäki (2012)	Antecedents of trust in asymmetrical business relationships: Differing perceptions between food producers and retailers	<i>Marketing Intelligence and Planning Journal of Business Research</i>	In an asymmetrical business relationship, the role of the more powerful partner in the development and maintenance of trust is minor
Krolikowski & Yuan, (2017)	Friend or foe: Customer-supplier relationships and innovation		Strong bargaining power in the supply chain by the powerful actor stops suppliers from investing in product development

Table 1 - continued

Author	Title	Journal	Findings
Rokkan & Haugland (2002)	Developing relational exchange: effectiveness and Power	<i>European Journal of Marketing</i>	Asymmetry of market position is negatively related to relational exchange between powerful retailers and suppliers
Kumar (1996)	The power of trust in manufacturer-retailer relationships	<i>Harvard Business Review</i>	Exploiting power to extract unfair concessions can come back to haunt a company if its position of power changes

Conversely, a significant number of researchers take the view that co-operation and conflict co-exist between weaker and stronger partners within the supply chain (Belaya & Hanf, 2009; Collins & Burt, 2003). As such there are open communication channels where channel partners manage conflicts by undergoing continuous balancing act (Terpend & Krause, 2015; Shen *et al.*, 2017). The findings of publications outlined in Table 2. indicate that cooperation and coordination approaches to power dynamics in supplier-retailer relationships are not only popular with management and business researchers but also current (see for example Kumar *et al.*, 2016; Terpend & Krause, 2015).

Table 2 - Co-operation and conflict co-exist – A balancing approach for win-win

Author	Title	Journal	Findings
Terpend & Krause (2015)	Competition or Cooperation? Promoting Supplier Performance with Incentives Under Varying Conditions of Dependence	<i>Journal of Supply Chain Management</i>	Cooperation and competition can coexist without significant risk of decreased performance b/w suppliers and buyer

Table 2 - continued

Author	Title	Journal	Findings
Shen, Wang & Teng (2017)	The moderating effect of interdependence on contracts in achieving equity versus efficiency in interfirm relationships	<i>Journal of Business Research</i>	The threat of coercive tactics recedes when joint dependence on the resources increases due to better operational efficiency
Chung, Huang, Jin & Sternquist (2011)	The impact of market orientation on Chinese retailers' channel relationships	<i>Journal of Business and Industrial Marketing</i>	Suppliers should focus on improving retailers' economic satisfaction through role performance and market intelligence rather than seeking the power of social satisfaction
Belaya & Hanf (2009)	The two sides of power in business-to-business relationships: Implications for supply chains	<i>Marketing Review</i>	Different aspects of power in the supply chain can be used for coordination and cooperation
Svensson (2001)	Extending trust and mutual trust in business relationships towards a synchronised trust chain in marketing channels	<i>Management Decision</i>	An approach beyond dyadic business relationships of power between suppliers and retailer is necessary to truly understand the trust
Kumar <i>et al.</i> (2016)	Collaborative culture & relationship strength roles in collaborative relationships: a supply chain perspective	<i>Industrial Marketing Management</i>	The relationship strength partially mediates between collaborative culture & market-based information sharing

Emerson (1962) noted that mutual dependence between the partners will influence their conduct and this will determine the direction of the relationship. Power dependence theory provides a theoretical justification for its usage by retailers for business relations with suppliers (Davis and Cobb, 2010). On the other hand, resource-dependent theory (RDT) highlights the resource-based view of the firm, which deals with managing inter-organisational relations by minimising the environmental uncertainty and dependencies (see, Davis & Cobb, 2010, p. 5). Given the limitations of existing paradigms about power-play in food supply chain relationships, perhaps, there is potential mutual leverage to be gained by combining the ethos of both power dependence and resource dependent theories to address the dynamic and complex process of supplier-retailer relationship. Approaching power relationship challenges in the food supply chain from a multi-theory perspective projects an integrated view of organisations, its internal and external environment and its interaction with power structures.

1.2. Power asymmetry and relationship management in the UK food supply chain: the case of Tesco

In the UK, it is generally acknowledged that food retailers like Tesco enjoy power asymmetry in their relationship with suppliers (Robson & Rawnsley, 2001; Bowman *et al.*, 2013). As a result, major retailers' control exchange relationships in the supply chain. This is especially in the case of fresh produce (fruit, vegetables and salads), which is predominantly supplied as retailer private (own) label (Hingley, 2005a). As fresh produce is short shelf life, suppliers need a stable and dependable buyer who can commit to a long-term relationship. Seeking stable long-term contracts to counteract perishability and seasonality issues overly exposes these suppliers to the dictate of retailers, who exploit their buying power to the disadvantage of suppliers (Hingley, 2005b; Kumar, 1996).

Ironically, in suppliers' desire to control market vulnerability due to perishability challenges, they unintentionally create another dependency with retailers in terms of unfavourable terms of contracts (Pfeffer, 1981). Thus, suppliers' trade sovereignty for support and create new sets of interdependencies with retailers. Such a commercial dilemma is akin to operating in a situation where there is a continuous struggle for survival (Davis & Cobb, 2010; Hillman *et al.*, 2009) and chances of success are uncertain. In such an environment characterised by uncertainty, the powerful retailers control resources which are valuable, non-substitutable and rare (Hillman *et al.*, 2009; Erturk *et al.*, 2010). Therefore, access to these resources as highlighted by the resource dependence theory creates multiple dependencies and increases power imbalances.

Another source of competitive advantage for retailers is their proximity to consumers. Tesco being one of the biggest retailers in the UK is one such example. They have access to 1.4 million-consumer demand information (loyalty card database) which is an important resource (Yu *et al.*, 2001) and this closeness to the consumer gives retailers a powerful lever (control over mass consumer information) (Felgate & Fearn, 2005). Data and consequently insights can be used from the point of sales or through loyalty card data (Felgate *et al.*, 2012; Burt & Sparks, 2003). Insights obtained from Tesco consumer data helps retailers mitigate the uncertainty of demand by effectively and efficiently employing resources across the chain. Conversely, this proximity of the retailer to the consumer has created a win-lose situation. Where, suppliers are obliged to the requirements of their powerful retail partner, such that they may manage their production/manufacturing facilities without necessarily knowing what consumers want.

Despite the skewed relationships that compel suppliers to comply with demands to take more cost-sharing, making them vulnerable, a profound point about this argument is its adverse effect on the entire supply chain sustainability. Indeed, red flags have been raised about the competitiveness and sustainability of the UK food chain (Taylor & Fearn, 2009) in which incomplete, skewed and one-sided channel leads to unsustainable practice (for example, short-term multi-buy offers on perishables). Here, uncertainty is driven by power asymmetry.

The conditions of this challenge further underscore this paper's position to explore rebalancing power asymmetry within the UK food supply from a multi-organisational behaviour theory perspective – that is, combining the principles underlying power dependence and resource dependent theories. The prospects of such an approach are enhanced by the exponential growth of information technology and availability of consumer purchasing information (Davis & Cobb, 2010) that can be used for the mutual benefits of both actors in the food supply chain. Similarly, there is ample basis to envisage that approaching this supply chain problem from the combined viewpoints of power dependence and resource dependent theories could help address other problems.

Ettouzani *et al.* (2012) used case studies of seven major UK retailers and four major suppliers to study the issues around promotions. They identified thirty-two problems and grouped them into eight themes. Uncertainty around consumer demand information was considered as the biggest problem faced by both of them reducing both efficiency (cost/waste) and effectiveness (sales growth) of promotions.

But the critical questions in this context are when and with whom this information should be used to improve the effectiveness of supply chain during promotions (Cannella & Ciancinno, 2010)? Effective information

sharing at critical stages of promotional activity would potentially help suppliers make informed decisions that would improve power imbalances in their favour.

1.3. The power and relationship matrix

Having proposed and justified the need to draw on the tenets of resource dependence and power dependence theories to address power asymmetry between retailers and suppliers, what is now presented is the relationship matrix between the retailer’s power and supplier relationship management. This integrates different levels of retailer’s power with relevant relationship management styles and thus highlights different arrangements in a different context. The theoretical underpinning of resource dependence and power dependence theories serve as the context for this figure’s development.

To visualise the development of the collaborative environment, there is a strong need to first understand the relationship between levels of retailer’s power with their management style as it strongly affects the suppliers sourcing options. Synthesising different power matrices in the literature (Cox, 2004 a & b) and linking it with different relationship management styles along with suppliers’ management and selection, this research proposes the following (see Figure 1).

Figure 1 - Impact of retailer’s power and relationship style on the supplier’s management and selection

Relationship style	Collaborative	Supplier Development C	Supply chain Management D
	Arm’s length	Bulk Supplier sourcing A	Short term Supplier selection B
		Low	High
Retailer’s power relative to supplier			

Figure 1 shows the multiple combinations of supplier's management based on different levels of retailer's power and relationship styles. Exercising a relatively low level of power, the retailer will choose a supplier based purely on volume and manages an arm's length relationship as shown in quadrant A (usually with tier two suppliers). Retailers will not work directly with them. An intermediary like tier 1 supplier is involved to manage the relationship. On the other hand, retailers will exert more power when they choose suppliers based purely on short-term and focus is exclusively on cost as shown in quadrant B. This arm's length approach is changed into a more collaborative style when they start developing the relationship with their suppliers, for example, through joint decision making and new product development. This arrangement is shown in supplier development as shown in quadrant C. Retailer's influence starting to grow as seen from raw material to finished product through proactive adaption and innovation working closely with the suppliers along the chain. Focusing on this quadrant D where the relationship is collaborative and retailers power is high there is a strong need by both stakeholders to maintain equilibrium between retailer and supplier. In this way, retailers extend their market expertise to suppliers by co-opting and co-creating a product which is close to consumer needs and have a long-term focus.

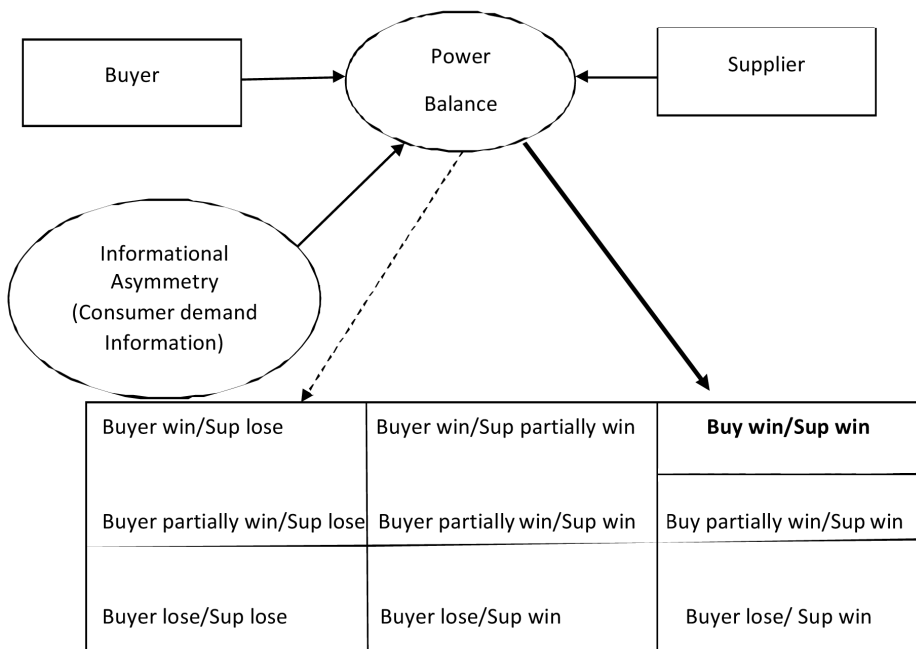
Resource dependence theory suggests that firms try to maximise their power by altering their structures and behaviours to acquire external resources as these resources decrease their dependencies on others (Pfeffer, 1981). One means of acquiring these valued resources is by co-opting with other organisations through social exchange. Co-optation adds stability to the inter-organisation relationships and serves to ameliorate the adverse effects of power asymmetry (Ulrich and Barney, 1984). In the context of a power imbalance scenario between small food suppliers and major retailers, that is characterised by inefficient promotions (Bogomolova *et al.*, 2017) and poor food waste records, both parties should as a matter priority begin to create favourable conditions for co-optation (Marcos & Prior, 2017). Eventually, co-optation will reduce the uncertainty of the business environment, which is an essential element for organisational survival.

1.4. *Conceptual model*

Based on the above research matrix, a conceptual model for balancing power asymmetry in the UK food supply chain with consumer demand information is presented (Figure 2). The literature revealed information asymmetry is one of the reasons for the power imbalance in the retailer-supplier relationship and resource dependence theory suggest that better resource access to information will reduce uncertainty. However, due to the

proximity of an important source (consumer demand) for a retailer, a win-lose scenario, especially for a small food supplier is created. This resource can potentially change the balance of power by converting a win-lose into a win-win situation for both as shown below. As consumer demand information is a resource controlled by retailers, sharing it with suppliers will improve power balance and mutual performance benefits for both partners.

Figure 2 - Conceptual model for balancing power asymmetry in the UK food supply chain with consumer demand information source



It is clear from the above figure no 2 that 9 different scenarios of win & lose situations (in relationship exchange) can be created when comparing buyer and suppliers value in the context of balancing power between them. However, information access and proximity can act as a balancing tool for this arrangement as highlighted in both resource dependence and power dependence theories. Consumer demand information is a key resource (resource dependence) as it provides useful insight about consumer behaviour, which not only improves supply chain efficiency but overall power balance(power dependence) as well.

This is important in the sales promotions of food items especially fresh produce where the shelf life is short and the chances of food waste are high. A better-resourced (informed) supplier with the help of a cooperating buyer (retailer) will make informed decisions and effective execution, thus maintaining the overall value for both of them. Due to demand information asymmetry, the buyer (retailer) is in a win situation as compared to suppliers (as indicated by the dotted line). However, when the buyer owned demand information is shared with the supplier, the exchange relationship moves towards a win-win situation for both (as highlighted by the bold line) in Figure 2, thus creating a dynamic equilibrium. This shows that proximity to a scarce resource as if demand information can affect the overall balance of power and relationship for the benefits of all stakeholders. Thus, information asymmetry can be reduced and co-optation will increase when the right information resource (consumer demand information) is used for planning and execution between both the stakeholders.

2. Research propositions

Based on the above framework and two organizational theories this paper makes the following propositions:

Proposition 1: Better access to resources through co-opting between small food supplier and retailer will improve power asymmetry

This proposition concerns the type of resources (a specific set of tools) which can help maintain a healthy and balanced exchange relationship between small food suppliers and their powerful food retailer buyer. Allocation of resources is a function of power (Pfeffer & Leong, 1977) and this becomes more critical when resources are either scarce or plentiful. Organizations endeavour to increase their power by gaining control over the flow of these resources. Consumer demand information is an important resource and its control by the focal organisation can create different dependencies (Provan *et al.*, 1980). Different authors have highlighted multiple resources such as capital investment and human resources. These resources have been shown to improve supply chain relationships (Provan *et al.*, 1980; Li & Lin, 2006). However, learning through non-competitive and cooperative manner is the most suitable resource as it helps firms to absorb, and transfer knowledge through collaborative arrangements and creates a win-win condition for collaboration (Tsang, 1999; Fawcett *et al.*, 2012). It also helps firms to share risks and cost in a more complementary way, thus enhancing each other's skill and position in the market (Tsang, 1999).

Information as a resource in a supply chain network has been discussed at two different levels (strategic and tactical). Consumer demand information has been classified as strategic because it helps interpret consumer behaviour to make an informed decision in volatile and uncertain markets. This critical for small food suppliers as their products have limited shelf life and resources to manage any uncertainty. However, opportunistic behaviour and divergent objectives have caused information asymmetry in the supply chain as information disclosures can be perceived as a loss of power for focal organisations (Li & Lin, 2006). Therefore, a better strategy is needed to overcome the barriers to information sharing and encouraging better supply chain relationships through knowledge and learning (Kembro & Näslund, 2014).

Resource dependence theory (RDT) is considered suitable in understanding the barriers and enablers of information sharing in supply chain networks, as it provides the resource-based view of the firm (Kembro & Näslund, 2014). Better information sharing has been shown to reduce environmental uncertainty (Li & Lin, 2006), which is essential for reducing dependencies between suppliers and retailers. According to Benton & Maloni (2005) failure to share information is considered a barrier to using power as a potential tool in supply chain integration for higher performance (Benton & Maloni, 2005). Therefore, the paper further proposes that:

Proposition 2: Sharing consumer demand information between small food suppliers and their retail partners can act as a balancing tool for reducing power asymmetry between suppliers and buyers for mutual exchange relationship benefits

Conclusions

The significance of power asymmetry in food supply chain relationships management cannot be overemphasised. However, there is disagreement in the extant literature regarding how power imbalance ought to be approached for the benefit of partners in the exchange channel. Despite the strong theoretical foundations of the existing schools of thought on power dynamics in supply chain management, they appear insufficient to address the risk exposure of small food suppliers and to guarantee the success of the entire supply chain and its long-term sustainability. By contrast, this paper draws on organisational behaviour theories (power dependence and resource dependence theory) to contribute to the discourse around power and dependence by suggesting that, the use of consumer demand information (shopper demand), as a critical set

of tactics, can be utilised to redress power asymmetry with powerful retailers for mutual benefits.

The conceptual model suggests that on the contrary, the often-imbalanced vertical food supply chains also adversely affect both partners, particularly in terms of promotions efficiency and food waste. This calls for a change of approach to value addition through interaction and co-operation to create favourable conditions for co-optation between the powerful retailers and small food suppliers. In this way, consumer demand information sharing is possible and thereby serve as the critical set of tools to improve power balance for a mutually beneficial performance.

Important strategic and practical implications for stakeholders within the food industry emerge from the analysis in this paper. Reducing uncertainty by a better understanding of supply chain stakeholder's behaviour will improve coordination. Waste and efficiency issues are key challenges faced by the food sector and using the information as a tool to manage them is gaining traction. The success of a firm is measured by the management of a complex web of relationships, which leads to simulated learning through the integration of information and its effective use. The emergence of big data has changed the way organisations manage their dependencies with other firms and the business environment. High level of information sharing could improve the performance and sustainability of the food supply chain. Sustainability is another important key dimension to this collaboration, better cooption and power equilibrium will result into better.

Contribution to theory

No single theory can adequately explain the complex business environment of the food supply chain due to the impact of multiple factors. Integration of resource theory and power dependence theory provides a more robust explanation of current issues of power balance and relationship management (Takashima & Kim, 2016). It shows how one aspect of a theory (power imbalance) provides a better explanation for another phenomenon (relationship management) in a given set of conditions with a specific context of the food industry (Hingley, 2005b). This integration also adds a novel resource (consumer demand) into the mix of relationships, power and their overall management.

To build more effective food supply chain relationships, improved information sharing should also be accompanied by shared objectives between the channel partners. This will help in developing a positive power base where each partner will be conscious of its available resources and manage them for the benefit of the whole supply chain. Thus, relational

use of power by the dominant firm will strengthen effective integration and improve suppliers' satisfaction towards creating mutual trust and coordination.

Future research direction and limitations

This research directs towards a novel direction of information used for the sake of power balance and better relationship management. This is especially true in today's environment of big data and consumer insights. All stakeholders are increasingly becoming aware of its use for their business and long-term prospects. This is especially true for the food industry where profit margins are low and competition is fierce. Consumer insights obtained through information sharing can play a significant role in shaping tomorrow's relations and power structures.

Information extraction and application has to be done keeping in view the available resources with stakeholders as using and generating consumer insights from big data needs extensive training. This becomes critical for small food suppliers as they are already short of resources and need retailers to help in generating useful decisions making for information sources.

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