

Mechanisms for industry transformation: analysis of organisational citizenship behaviours in a design-production innovation

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Abstract

A well performing housing sector is critical to national economic and social objectives. The Australian housing sector is failing. Significant inefficiencies in the construction process has resulted in a 40 per cent increase in average construction time over the last fifteen years which has resulted in increased costs. The sector is in need of transformation. Our study on design production technology innovation suggests such a transformation is catalyzed by extraordinary leadership that enables integrated systemic solutions in an aggressive, risk averse and litigious industry. The role of exercising such leadership often emerges among housing developers. A challenge to these leaders is that the housing sector is highly competitive and aggressive and actors are motivated primarily by profitability. Such behaviors tend to be institutionalized and thus inhibit change. It is proposed that leaders can institute a major change initiative without compromising on organisational profitability. Large scale innovations require extraordinary levels of collaboration among key actors and it is speculated that they are led by champions who display unusual citizenship traits. This paper reports on a nationally funded 3 year study on offsite manufacturing and seeks to explore the prevalence of such organisational citizenship behaviour (OCB) in the housing industry generally, and in housing developers specifically. OCB is a complex phenomenon which arises when individuals voluntarily assist in the workplace to implement courageous and risky initiatives without either implicit or explicit reward for seeking to achieve this noble greater 'good'. There is a body of research developed on OCB and although theoretically there is support for the conceptual effectiveness of OCB in an organisation there has actually been little empirical evidence linking OCB with effectiveness and outcomes. Some examples have been trivial and there is work to be done to identify linkages between OCB and significant outcomes as well as linking different types of citizen behaviours to different outcomes. OCB has not been explored to a great extent theoretically nor empirically in the housing sector. There is nothing more risky in the housing sector than introducing new policies, procedures or practices that may erode an organisation's profitability and therefore trust in leaders is critical. Identifying the prevalence of this construct both theoretically and empirically will contribute to the field of housing research and also to the practice of leadership in the housing sector.

Keywords: *industrialised building, industry leadership, citizenship, opportunity management*

1. Introduction

The housing sector has always been seen as an important part of the construction industry and is considered a key indicator of the health of the Australian economy. The housing sector generally makes up 50% of the construction industry and in 2012 the construction sector represented 7.7% of the GDP of an economy (ABS, 2012). In Australia in 2009 the residential sector accounted for approximately \$70b and from 2000-2009 the average was 47% of the total spend in the construction industry (ABS, 2010). It is a critical time in the Australian housing sector. "Australia's housing system is under acute stress (Yates 2008; Grattan Institute 2013). We were once a nation characterised by good housing for all and the Great Australian Dream, but we now have one of the most unaffordable housing markets in the world (NATSEM 2011), chronic housing undersupply (National Housing Supply Council 2013), a rapidly shrinking public housing safety net (SCRCSSP 2001 and 2013), substantial pockets of concentrated poverty and disadvantage in the private housing market as well as in the social rental sector (Hulse et al. 2012). Each night more than 100,000 Australians are homeless (ABS 2012)." (Baker et al, 2015). The housing industry is failing to meet demand (NHSC, 2012) and when demand is met the housing is costly because of construction inefficiencies. The industry is faced with a crisis in our capacity to plan, design and construct to meet our nations needs unless we act immediately to improve its capacity for a more efficient, effective and innovative supply system. These inefficiencies have resulted in a 40 per cent increase in average construction time over the last fifteen years (Gharie et al, 2010) resulting in increased costs. Over the last twenty years housing affordability has worsened; with the number of homeowner purchasers with housing costs in excess of 30 per cent of income more than tripled (Wood et al, 2014).

Housing research in the past has focused on policy and planning problems as the way to address supply challenges (Holmes et al, 2008). To date the housing supply debate has been largely focused on housing demand, affordability and land supply. Lack of innovation in housing supply is considered a barrier to the sector's capacity to meet market demand (NHSC, 2012) and yet very little attention has been paid to challenges experienced by those involved in the design and construction stages of supply. One of the suspected overarching key causal factors of poor housing supply is the fragmented nature of housing supply with numerous actors involved with their own objectives. A lack of coordination and integration between supply chain actors can exacerbate barriers to innovation. It is proposed that a more cohesive supply chain would prove beneficial to all housing sector stakeholders.

It has been proposed that one strategy for achieving greater cohesion in the supply chain is through offsite manufacturing. Offsite manufacturing (OSM) is a production technique in which prefabricated components of a building are manufactured in a factory and transported to the site for erection and assembly and is one of the most significant innovations that is now emerging in the Australian housing sector. Key outcomes of OSM is improved quality design, reduction in time, productivity improvements, improved safety and wellbeing, reduced rework and thus overall improved housing affordability. However, OSM requires re-engineering of the entire project development process, since traditional construction is achieved mostly through on-site activities. When housing developers attempt such re-engineering for new ideas it also requires support from key stakeholders for example, government agencies to set up projects to ensure the right conditions for such an innovation – as well as designers and fabricators with a deep commitment to solving design, construction and production

problems. Thus a key overarching constraint to uptake is that OSM is perceived to require extraordinary levels of collaboration (London et al., 2014). Introducing innovations such as OSM in construction processes and design production technology can thus effect revolutionary change. Such innovations can only succeed with impact as whole-scale industry transformations through leadership that catalyses the entire development chain. To enable such integrated systemic solutions in what is considered to be an aggressive and litigious industry requires extraordinary leadership qualities. Past research has shown that housing developers are the *linchpin* in the urban development chain; they can significantly influence housing innovations (London et al; 2014). This research will therefore explore:

What is the nature of transformative leadership behaviours in the housing development chain in large scale offsite manufacturing collaborative efforts?

This study is important to housing construction researchers and practitioners because there has been very little sociotechnical research on adoption and diffusion of technical innovations, which are critical to housing sector performance and thus to national economic outcomes and individual/community well-being. The housing sector is significant in most countries and investigation of innovations that ultimately improves housing affordability is vital. It is universally accepted that a well performing housing sector is critical to national economic outcomes. Housing also affects us at individual and community levels and influences our wellbeing. We all have the right to safe, secure and affordable housing. This paper is part of a three-year national Australian Research Council study: “Efficient Construction: analysis of integrated supply chains on novel offsite manufacturing housing” which is seeking to explore collaborative practice in housing supply chains in Australia. Through our analysis and results from the first two case studies it has emerged that an examination of individual leader behaviours is important, as there appears to be a close link between large scale collaborative efforts in OSM and leader behaviours. For this paper, we focused on the construct organisational citizenship behaviours in the context of two detailed qualitative case studies.

1.1 Conceptual Model of Influences on Collaborative Practice

The role of champions in driving large-scale industry change cannot be examined as a phenomenon separate from the relationships they forge in order to accomplish such change. Therefore it is critical to understand the collaborative relationships that leaders forge in order to carry out industry transformation. A model shall help us to understand the nature of large scale collaborative efforts in theoretical and practical ways as a blend of underlying economic and social structure and individual behaviour. We shall explore collaborative activity across four dimensions:

- Collaboration and the nature of work: Work in construction involves project based work. Work may be unpredictable and volume of production may vary. Work in construction can also have very different outputs ie large scale complex projects that run for many years to small scale short term projects. OSM products and operations may still have to be flexible and responsive to project environments.
- Collaboration and the nature of individuals: Construction collaboration is focussed on performance ie time, quality, cost. However, the link between collaboration and performance measures is not

simple. Collaboration achieves other outcomes- new products and processes, learning, power, better coordination and communication which are difficult to capture and quantify but often lead to more tangible outcomes. People invest in the collaboration act to achieve social, cultural, intellectual and financial capital. Such investment may involve trade-offs and failures and may not result in immediate success.

- Collaboration and the nature of markets: Collaboration takes place between organizations or between organizational units. Supply chains are embedded in a larger context shaped by institutional factors: economics, laws, governance, regulations, industry and societal culture. These 'institutions' create and recreate the 'rules of the game' ie the way things are done. The formal and informal dimensions of institutions and organizations and how these shape and are shaped by collaborative activities influences collaborative environments.
- Collaboration and the nature of systems: Collaboration in construction is a mixture of technology and social processes. There is a complex ecology of human and non-human elements. Collaboration should emphasize the role of people. It is important to examine how collaboration arises between people. However, material elements like products, IT systems, artefacts and equipment can play a critical role in collaboration as well.

Underpinning all dimensions of the model is the question of whether collaboration and competition are mutually exclusive. We suggest that there are creative ways to manage the tension between the two. We also suggest that collaborative practice more than likely both influences and is influenced by these four dimensions (see Figure 1). This paper focusses on the *nature of individuals* dimension

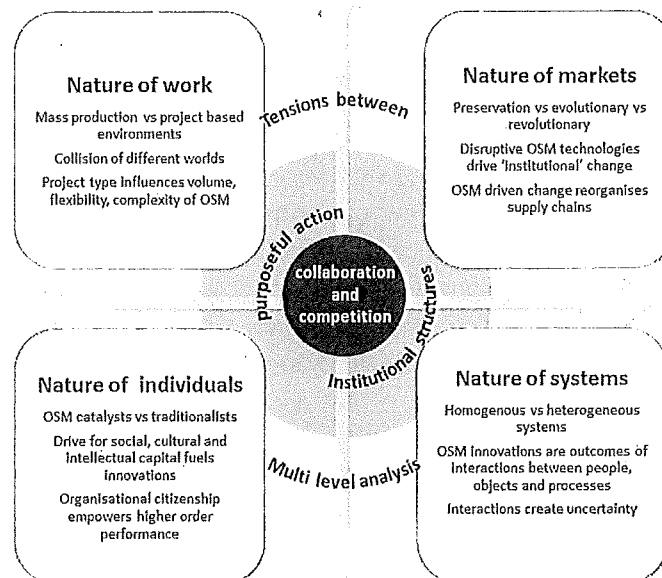


Figure 1 Influences on Collaborative Practice in OSM Housing Innovations

2. Transformative change

Introducing new initiatives is problematic because existing institutions inhibit change. An institution is a tradition, custom, convention, norm or ritual which has developed over time and has become standard practice. Such “rules of the game” can be identified through institutional analysis. In certain sectors such as urban residential development, institutions can hamper opportunities for innovations, in particular when these interlocking institutions are designed to support profitability at the expense of change. Yet leaders with vision may institute a major change initiative without compromising on organisational profitability. Two major change initiatives were explored using urban residential developments as the prime research site where innovations were achieved alongside profitability. The housing developer’s role as the key orchestrator and change agent in creating, inhibiting and changing the ‘rules of the games’ is critical to the housing development process. Importantly, such large scale innovations were found to require extraordinary levels of collaboration among key stakeholders.

2.1 Housing Innovations:

An innovation in the housing industry that has received increasing attention over the last five years is offsite manufacturing. Offsite manufacturing has been posited as a technology solution to many of the problems in the industry particularly increased construction time which is then linked to increased cost and thus decreased housing affordability. One of the suspected challenges that offsite manufacturing can assist with is the lack of coordination and integration between the actors in the development chain. It is proposed that a more cohesive development chain would prove beneficial to all housing sector stakeholders. Ad hoc examples and applications by housing developers attempting to integrate to solve specific problems, such as productivity, has had some success. However, these achievements and the detail of how integration is achieved has not been diffused readily throughout the sector and thus has had little real impact on overall sector performance. Whole-scale industry improvement requires a concerted effort to undertake a stepwise change. A key to the solution is to investigate successful examples of integrated chains which have resulted in wholesale change in the sector (London and Siva, 2011). The current housing construction model is characterized by traditional craft-based on site construction techniques (Loosemore et al., 2003) and there have been very few innovations in the housing sector that have created transformative change. However, one particular example of an innovation in Australia that had significant impact on the sector was a technical system that fundamentally changed the way in which footings are built. The Australian Housing Supply Chain Alliance commissioned a study to investigate this particular innovation so that lessons could be learned about the pathway for highly innovative firms seeking to explore and commercialise novel ideas. The study identified that the housing developer held a significant degree of influence over others in the chain, coalesced the actors and was the champion of the innovation (London and Siva, 2012). This study presented an innovation process pathway which identified the role of social, cultural and intellectual capital in changing barriers into enablers. Through narrative analysis, barriers to innovation and enablers were identified. Through the collection of stories, a key tool in narrative analysis barriers were identified to include; professional jealousy whereby engineers chose not to adopt the system as they were in competition with the inventor of the system; negative perceptions and attitudes to the innovation and to change; high costs incurred by the distributor of the

footing system which in turn resulted in inflated prices of the system and lengthy and costly patent disputes and adversarial litigations.

Further to this various enablers to the innovation process were also raised including:

- mutual understanding and trust and strong support between participants to create a solution
- shared but different business and altruistic motivations
- participants shared philosophy towards risk taking which was influenced by the following considerations; economic rewards, trust in the credibility of other players and the authority and influence associated with specific participants whose support for the waffle footing system offered its members the confidence to adopt the system.
- the role of champions in the innovation process was raised as an important enabler. An innovation champion may be viewed as “a charismatic individual who throws his or her weight behind an innovation, thus overcoming indifference or resistance that the new idea may provoke an organisation” (Rogers, 2003, p. 414). In the case of the waffle footing innovation its wider diffusion was reliant upon not just an individual champion but also a group of champions working together across organisations.
- explicit and appropriate identification, alignment and integration of capacities between participants and development of alliances or relationships and collaborative efforts between participants to access required expertise and capacity for the innovation process
- acquisition and use of artefacts in developing reputation enabling credibility to be associated to the innovation. It was important to provide evidence [ie ‘artefacts’] that were clearly understood and well accepted by the industry; these included accreditations, approvals and production of publications. They were critical for initial acceptance and also wider diffusion of the innovation.

The nature of leaders’ behaviours in this particular detailed case study emerged as important to creating and enabling the innovation to be diffused in the sector. This concept is taken up further in this paper and explored in more detail.

2.2 Organisational citizenship behavior

A key characteristic of transformational leadership is organizational citizenship behavior and it is not well considered in the construction leadership literature. Construction leadership literature tends to focus on the individual’s attribute, the ‘hero’ model, without explicit connection to their place of work or the organization; that is, not just the qualities of the person but underlying this is how the person identifies themselves and their place in the world – ‘*citizenship*’. Organisational citizenship behavior (OCB) is a complex multi dimensional phenomenon which can be an important aspect of human behaviour at work. Dennis Organ is generally considered the father of OCB. Organ expanded upon

Katz's (1964) original work. Organ (1988) defines OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization." Organ's definition of OCB includes three critical aspects that are central to the construct. First, OCBs are thought of as discretionary behaviors, which are not part of the job description and are performed by the employee as a result of personal choice. Second, OCBs go above and beyond that which is an enforceable requirement of the job description. Finally, OCBs contribute positively to overall organizational effectiveness. OCBs arise when individuals voluntarily assist in the workplace to implement courageous and risky initiatives without either implicit or explicit reward for the behaviour for some noble greater 'good' (Organ, 1988). The 'good citizen' model includes the display of such behaviours as altruism, conscientiousness, loyalty, sense of fairness, individual initiative, acts of creativity and innovation, self-development, 'sportsmanship', courteousness and civic virtue (Podsakoff et al, 2000). Although there is extensive research on OCB and although theoretically there is support for the conceptual effectiveness of OCB on an organisation there has actually been little empirical evidence linking OCB with effectiveness and outcomes. Indeed according to Podsakoff et al (2000) some examples have been trivial in this area of research and there is much needed work to be done to identify linkages between OCB and significant outcomes as well as linking different types of citizen behaviours to different outcomes. There is a close relationship between OCB and transformational leadership. It is also speculated that individuals that display OCBs may tend to engender trust in followers and this is a most powerful motivator towards taking risky behaviours. This however has not been explored to a great extent theoretically nor empirically (Podsakoff, 2000).

There is nothing more risky in the housing sector than introducing new policies, procedures or practices that go to the heart of the organisation's profitability and may erode that profitability. Identifying the prevalence of this construct both theoretically and empirically will not only contribute to the field of housing construction research but also to the practice of leadership and change in the housing sector. London and Siva (2012) have conducted a comprehensive analysis of innovation diffusion research and identified numerous studies in different disciplines. Each discipline typically sought to concentrate on investigating one main type of innovation. In this study we would seek to analyse the two innovations with the intent of identifying any industry wide patterns within the context of organisational citizenship behaviours. We build upon the earlier housing innovation small scale study that London and Chen (2011) conducted where some elements of like-mindedness and altruism were identified in the champions of the innovation. We suspect that there is significant merit in developing this construct as a way forward for the industry as we have already seen that the key champion displays some of the behaviours. The housing sector is rarely considered from the vantage point of the 'developer' or the development chain and yet this is how change is catalysed or undermined. Not only are there theoretical limits within the research on housing construction innovations but it is well acknowledged that there is a dearth of empirical work and available data supporting delivery of housing innovations. No study captures developers' responses to grappling with and reconciling the dichotomy of a sense of citizenship towards 'housing affordability' and a commitment to organisational profitability.

3. Methodology

In analysing the data, we employed actor-network theory as a methodological approach (see Figure 2). Actor-network theory (ANT) overarches a range of theoretical and methodological approaches based on the premise that much of social reality can be understood as the outcome of actors (human and non-human) interacting in heterogeneous networks (Law 1992). From an ANT perspective, complex phenomena such as organizations, technologies, information technology systems and communities are all networks made up of people, objects, documents and other entities exercising some form of agency, shaping their relationships with other actors, and in doing so creating network effects. Much of the “work” of creating a network is often, though not completely, carried out by a key actor, referred to as a prime mover. The prime mover seeks to enrol other actors into a network, and to subsequently stabilize this network, in order for the network to address a certain problem (Callon 1999).

METHODOLOGY: ACTOR-NETWORK APPROACH

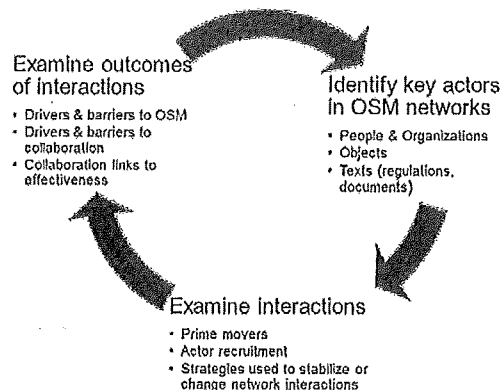


Figure 2 Actor Network Theory Methodology

Data was collected from two case studies. We used ANT to identify key drivers of change in both organizations and to examine how they established interactions with other actors in order to effect such change. Eight interviews were conducted in the first company and six were conducted in the second. The results of the analysis is presented and in particular summaries of the thematic coding of barriers and enablers to offsite manufacturing and then barriers and enablers to collaborative practice are summarised in Tables 1 – 4. The data was then interrogated specifically for evidence of organisation citizenship themes including the display of such behaviours as; altruism, conscientiousness, loyalty, sense of fairness, individual initiative, acts of creativity and innovation, self-development, ‘sportsmanship’, courteousness and civic virtue. Specific quotations that suggest these leadership qualities were extracted.

4. Results and Discussion

The empirical settings of our study are referred to here as Company A and Company B. Company A is a diversified property group that was recently acquired by an international real estate company. It focuses on the development of residential, commercial, industrial, and investment properties, as well as on income development/ investment and property management, and it has an established reputation for carrying out mega-projects. One of its key projects was its involvement as a partner in a joint consortium undertaking the multi-stage redevelopment of the Athlete's Village for the 2006 Commonwealth Games into a residential estate, a project valued at more than AUD \$40 million. The plan for the residential estate involved the construction of over 1000 dwellings, with one fifth targeted for the provision of social housing. The project also included refurbishing a number of heritage buildings as well as the creation of wetlands and parklands. Such projects are in line with the organization's aim of achieving sustainable communities; as one executive mentioned, it was not the company's style to just "build houses and walking away". An important element of the development effort was the design and construction of low- and medium-storey apartment buildings, usually made up of one-, two-, or three-bedroom apartments, in five stages. In the first three stages of the development, managers from Company A noted that there were recurring problems related to the way floors were laid, notably risks of falls from heights and the potential inhalation of dust by workers as they sought to grind floor panels. In 2012, Company A brought together key suppliers, designers and consultants into a team that developed a prototype for a cassette floor, one that could be prefabricated offsite and was light enough to be craned into place. After six months of frequent, face-to-face meetings, a prototype was developed and was eventually used in Stage 4 construction, which involved a five-storey timber building. The use of the cassette floor reportedly led to the building being completed one month early and to building costs being reduced by 25%. The cassette floor is showing significant potential in terms of driving large-scale projects; shortly after the successful incorporation into the five-storey building, it was successfully used in the construction of 48 two-storey homes which were completed swiftly over a six-and-a-half month period. We chose Company A for this study because of its drive for innovations which have strong potential for driving future large-scale initiatives, coupled with its distinct orientation towards "higher order" performance goals such as community sustainability and worker well-being and safety. Company B is a regional company operating in two locations in South Australia. Organization B has evolved over time, having its beginnings with a small firm founded by a single entrepreneur, and then expanding over time to include multiple businesses, four owners, and multiple managers. The company maintains properties and provides kitchen solutions, but its core business is in the design and construction of site-built houses as well as transportable homes, with the latter being manufactured on company premises then trucked to specific locations. The company's capability for building transportable homes has allowed it to penetrate a number of markets that had previously been underserved, mainly because of the absence of trades in specific areas. In recent years, Company B has pushed its transportable line even harder through the development of a new innovation: a concrete floor that remains light enough to be transported, but allows houses to be buried or installed at ground level. The lightweight concrete floor is in contrast with other transportable examples, which are generally built half a meter above ground level and are generally linked to energy, noise, and ventilation issues. We chose Company B for this study because its innovations in transportable housing have positioned it for potential large-scale projects in diverse sectors. The company has successfully undertaken retirement village projects;

notably this potential for serving aging communities could be further heightened with its new concrete slab innovation because it allows for easier (ground-level) access to homes. Company B has won allocations under national rental affordability schemes, which indicate its potential for serving markets in need of affordable housing. The Company has provided temporary housing structures for the mining sector. It has partnered with the Department of Defense to address housing issues on Indigenous lands and has also explored taking their innovations into more commercial spaces; for example, one of their proposals involved the use of the concrete slab as a component for prefabricated bathrooms for a hospital in Adelaide. At the same time the company executives have stated that they strive to maintain a key position within the community. The company is well-known to its regional customers as a dependable and trustworthy provider of homes, and to its suppliers as a partner who builds fair, long-term relationships that transcend “chasing a buck”.

4.1 Barriers and Enablers

The barriers and enablers to offsite manufacturing were identified across the two companies. The four most commonly considered barriers included technical challenges, resistance to the new innovation, need for significant investments and regulatory challenges and the five most common enablers included; champion, performance incentive (revenue), readiness for change, performance incentive (cost) and transferability of innovative solution from another situation. Importantly the role of the champion was considered the most significant enabler to catalysing the offsite manufacturing innovations. Our analysis also included coding text in relation to commentary on collaboration barriers and enablers. The four most predominant collaboration barriers were lack of skills, focus on own goals, lapses in information-sharing and championing the relationship over performance. The most predominant collaboration enablers included; working off shared plans, co-location, frequent meetings; recruiting people with the right qualifications, shared history and loyalty and the leader enablers diverse and multiple contributions. These appear to match the attributes of organizational citizenship behaviours. However we then developed another layer of analysis whereby we selectively attempted to identify commentary and explicitly identify quotes to map evidence of organizational citizenship behaviours.

Table 5 Organisational Citizenship Behaviours Mapped to Cases

| OCB CHARACTERISTIC | CASE 1 | CASE 2 |
|---|---|--|
| <p>Altruism</p> <p><i>feelings and behavior that show a desire to help other people and a lack of selfishness</i></p> | <p>And I guess that's relevant because I wanted to give you that sort of background and who we are as a company, we're very focussed on obviously making money. That's what we're in business for <i>but we also have very strong sustainability focus and that's sustainability outside of just environmental sustainability</i> even though that's a key part of it <i>but it is also just about community sustainability and the development of what we call communities as opposed to just having a development where we buy a block of land and build 300 homes and walk away.</i> We actually have a very strong vested interest in how that community operates, how it integrates with a wider community and all those sorts of things, which is a big sustainability focus.</p> | <p>...the company is not one to chop and change. <i>It doesn't burn relationships. And sometimes we know we pay a little bit more</i>, but we're not – we might get something a bit cheaper down the road.</p> <p>Yeah, I think so, <i>but you've got to love Wayne for it because he's just about relationships</i> and - but, you know, just got to find that happy balance, we're a bit too happy families at the moment, yep, but that's fine.</p> |

| OCB CHARACTERISTIC | CASE 1 | CASE 2 |
|--|---|---|
| <p>Conscientiousness</p> <p><i>very careful about doing what you are supposed to do : concerned with doing something correctly</i></p> | <p>...they're little things. I think some of those things that are just good building practice, like one of the first days that they were out there doing stuff, when I'm out there walking they were starting to do a job to put some bearers up and I said to them, "Show me the screw that you're using," and the screw they were using, to my mind, wasn't long enough, and it just didn't look right, so it was, "Guys, I want to see confirmation that that is even the right screw or you get the right screw," and they went away and they, "Oh, no, they're meant to be 50 ml longer." <i>But there's those things that are just attention to detail and you just need somebody to walk around.</i></p> <p><i>So there were a lot of workshops and we went through everything from safety, what happens if the cassettes are lifted for the first time and it disintegrates in the air, what are we going to do because you're going to have Work Safe on board - on site, the site is going to be shut down.</i></p> <p>What do we do now? How do we then determine what the issue was? <i>So we went through every scenario you could think about.</i> So it wasn't just naively walked into. We certainly went through a lot of planning.</p> | <p><i>So I want it to be as foolproof as it can be.</i> It's like in our new displays we've gone and put set downs and hobs in the showers, so just making sure that was all - so when you start getting flex in a truck with the transportable side of it, making sure they were going to hold up. So then we had to go back to the glue suppliers and the primers and all that and make sure everything was going to stick properly in there so that it doesn't pop the tiles, <i>because I've never had a problem with tiles popping on a floor and I'm not about to start.</i> So when they wanted to start doing that I said, hang on, we've just got it all right. Because Port Lincoln had a problem with them early in the piece and they were using the wrong primers and wrong glues, so unless you get that right - so that way we're relying on the supplier's technical advice to get that all over the lines <i>just to make sure we're putting the best product in we can.</i></p> |

Table 5 Organisational Citizenship Behaviours Mapped to Cases

| OCE CHARACTERISTIC | CASE 1 | CASE 2 |
|---|--|--|
| Loyalty <i>a loyal feeling : a feeling of strong support for someone or something</i> | <i>You're working as one collective who are delivering one outcome. So you're not sitting there looking at Joe Bruno saying, "You work for Irwins. You must do this." Everyone understood that we were coming together, we were doing something fairly unique and so from that point of view they're helping each other and Joe can go over to Rob de Brincat's built site... Factory, and talk to him and sort of helping, "You've got this problem with the cassette." Now, cassettes have nothing to do with Joe in the end. Joe is involved and Irwins are involved in providing the overall structure to the building, not to do the flooring.</i> | The best part is everybody works as a team, right from council approvals through – you walk past and everybody's firing a question at everybody. It's not, "That's my department done," and walk away from it. <i>You can go to anyone at any stage and they're all willing to put their input in and say, no this is what's happened.</i> |
| C1: <i>Quotes are more of loyalty in relation to teamwork, that is, being loyal to a collective</i> | <i>I think when we finished it all I think we got a third of the way through the project and we had already done the first two levels, I sent out an email and just said, "Look, these are the people to thank in the industry for this. It wasn't me." I sent it out. I said, "Irwins have done this. Tillings have done the (33.36). Bownes and Timbertuss were involved." I actually named them. I thought, I'm going to name these people and just spray out an email to the whole of Australand and just let people know this wasn't about us. This is about them coming together and being able to commit and cooperate the way they did. I think you've got to do that.</i> | <i>We've nearly completed it. We've probably got I think half a dozen apprentices still on our books and the rest we've turned into contractors that work for us. So yeah, it's just been a fantastic result.</i> <i>Don't burn bridges. I mean - - - there will be a time where you've got to work with that person again I'm sure, and it's happened, it's happened, and I've had to work with people. I've called them up to come back in on other occasions. So if I had to get nasty I wouldn't be in this game.</i> |
| C2: <i>Quotes are more of loyalty in relation to growing a relationship over time</i> | | |

| OCB CHARACTERISTIC | CASE 1 | CASE 2 |
|-----------------------|---|--|
| Sense of fairness | <p><i>C1: Fairness here is related to making sure that in a relationship, neither party ends up being taken advantage of by the other</i></p> <p><i>There's things you can do. So that gives him a bit of relief from a financial point of view and then you start paying him as soon as cassettes come on site. You've actually already got the invoice and you're ready to pay him on that day. So the cassettes come on site, boom, the money is straight into his account. Now, what you have to explain to them is once we get this up and running that's not going to be the normal contractual arrangement. ...But for a first-off project if that's what gets the industry going and still gives me a cheaper building than the rest of the builders in WA, you know.</i></p> | <p><i>C2: Fairness here is related to delivering what was promised to another party, and being up front about it</i></p> <p><i>...we've got some really good long term relationships, we'll always try and foster those. We won't try and do the, you know, try and get you down and then play you off each other, we just don't do that at all.</i></p> <p><i>We try not to hide anything, that's the thing. You've got an upfront cost, people might say you're dearer, but then they might come back six months later and go, you weren't. There was nothing hidden in ours, and that transparency helps you sell stuff too, especially out in the country.</i></p> |
| Individual initiative | <p><i>Now, luckily for me, I was probably silly enough, naive enough that I just thought, let's go. I'm the sort of person who just wants to go for something. So if I can see a way that's going to come - the outcome is achievable, my view is let's go for it, and that's what we did from that meeting.</i></p> | <p><i>And like, yeah, anything with this one, the - particularly Keith, he is the one that's our true entrepreneur. I like that, I'm going to go do that. Bang. And the company has to keep up.</i></p> |

Table 5 Organisational Citizenship Behaviours Mapped to Cases

| OCE CHARACTERISTIC | CASE 1 | CASE 2 |
|-----------------------------------|--|---|
| Acts of creativity and innovation | <p>It's not about one building. <i>It's about what innovation we have brought that can actually lead to newer and better things that we can do going forward...</i></p> <p>It was a matter how we can actually improve on what we already had accomplished. So that's probably where the company decided to go with that five storey building at Parkville. And in doing so we had to obviously review everything that we've done previously and make sure that we've got all our ducks in line <i>to be able to take the next step into building five storeys in lightweight because the whole — it was a completely different challenge to us.</i></p> | <p><i>We're always open to change, that's how things move forward. Otherwise nobody would have a concrete slab home, concrete slab transportables.</i></p> <p><i>So we would be having a beer and he would come up with some silly ideas. We would be throwing just ideas around all the time. That's (the concrete slab) only one of many. So we would sit down and we would smash that stuff out over a beer for months until we thought, yeah, no, we've got it, that's the go.</i></p> |
| Self-development | <p>...so we did Parkville stage 1, again timber frame construction, a mixture of two and three storeys on top of car parking. It wasn't that efficient and it wasn't very well built. <i>I think we were learning a lot within ourselves as to how to put a project like that together.</i></p> | <p><i>it's probably a bit of a ridiculous reason in some ways but we thought that we should be servicing the market with transportables but didn't have — and had had a client, a particular client, that wanted 50-odd cabins, and because I had experience in it we looked at better ways to do it than we've done in it in the past, or I've done it in the past because I knew a lot of the pitfalls and I'd been involved in the industry and then stupidly thought yeah, I reckon I can do it and do it better this time.</i></p> |

| OCB CHARACTERISTIC | CASE 1 | CASE 2 |
|---|--|--|
| <p>Courteousness and civic virtue</p> <p><i>C2: Civic duty here is one's everyday behaviour being shaped by concern for the community</i></p> | <p><i>C1: The quote for altruism can apply</i></p> | <p>For me <i>the owners are your typical country sort of people, very open, very trusting, very focused on relationships and just good people to work with.</i> You don't – it's not – and I'm coming from a real corporate environment, so previously I worked for Rivergun Homes and I was there for 10 years – a cut-throat corporate, very difficult to work in that sort of environment for any length of time anyway. For 10 years I made it. That was the goal. And so for me it was <i>a really refreshing change to come into a company that cared about its people, its suppliers, its contractors, and its product.</i></p> <p>we don't want anyone going around saying we're trying to, you know, rip money off... Yeah, in the community, <i>so the community is huge for us.</i></p> |

5. Conclusions

Theoretical work on organizational citizenship behaviours has indicated that there are at various characteristics associated with leaders' who display OCBs. However, attempts to study the phenomenon and link it empirically to performance outcomes have been limited. In the two case studies we have mapped explicit OCB in the two case study organisations who have lead major transformational change. The introduction of a new way to design, construct and install timber flooring as an integrated cassette module which is built off site and placed onsite as a major unit required significant changes in processes. The second case study whereby all design and construction of a house is completed remotely from the site and then is transported to the final location also required significant process change. The interactions between the various actors required not only technical solutions but also new business models and new ways of working. The two case studies are considered exemplar technical solutions as well as highly successful business initiatives for the lead actor organisations. There was clear evidence in both case studies of altruism, conscientiousness, loyalty, sense of fairness, individual initiative, creativity and innovation, self-development and courteousness and civic virtue. The paper contributes to our understanding of leadership qualities of key actors who champion risky initiatives in the housing sector and in particular offsite manufacturing innovations. Leadership in construction management research has tended to focus on leadership types (charismatic etc) and less so on qualities that engender deep respect and trust – qualities which motivate others to follow. We have confirmed empirically a link between OCB with effectiveness and outcomes. We have not linked different types of citizen behaviours to different outcomes though and interestingly all behaviours were exhibited except for 'sportsmanship'. Future research shall explore the relationship of the different OCBs to an examination of interactions in the actor network; namely how the behaviours enable *prima moven* actors to recruit other actors into the network and the various strategies that are used to stabilize or change the network.

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