Information relations for social change: exploring the information behaviour of academics undertaking impact work

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Abstract

Introduction. This paper examines academics' information behaviour in undertaking research for societal impact. It explores how researcher-stakeholder relationships provide sites of information exchange where academics develop skills and knowledge needed to undertake impact work.

Method. This qualitative study involved semi-structured interviews with 27 academics at 18 institutions across Australia. Participants were recruited across disciplines and at various career stages.

Analysis. Constructivist grounded theory was used as a methodology, with Fiske's Relational Models Theory as a framework for analysis.

Results. Results show that information behaviours relating to impact work were enacted within relationships with industry, community, and government partners. These relationships were characterised by four elements: curiosity, reciprocity, trust, and engagement.

Conclusion. The paper presents a model of Relational-Informational Impact Practice to guide individual researchers' information behaviours and to inform university support programs for researchers engaged in societal impact work. The model outlines the interplay between curiosity, reciprocity, trust, and engagement, and impact-relevant information behaviours, such as information needs identification, sharing practices, and serendipity.

Introduction

Academics' information environments are changing in response to increasing expectations that research provides tangible, demonstrable societal impact. One approach to achieving societal impact is through engaging with potential beneficiaries of research outcomes during project design and implementation. This impact-related work involves developing trusting relationships through interactions, information sharing, and personal connections (Morton, 2015; Nowotny et al., 2003; Weiss, 1979). For academics who do not routinely undertake community-engaged research, this shift creates new information needs and requires new information sources and project management approaches (Given et al., 2015; Kelly and Given, 2023; Willson and Given, 2020). To date, little is known about the information behaviours of academics engaging in societal impact activities.

This study examines academics' impact-related information behaviours, focusing on how researcher-stakeholder relationships are enacted as sites of information exchange. Through interpersonal relationships with potential beneficiaries in industry, community, and government, academics learn how research may benefit society and the skills needed to lead to societal impact. Using Relational Models Theory (Fiske, 1992, 2004) as an analytic framework, we develop a model of Relational-informational Impact Practice. This model can inform how individuals modify research practices and information behaviours for impact, and how universities can best support researchers.

Literature review

Few studies explore, holistically, the systems, social behaviours, and individual experiences of impact-focused environments (Polkinghorne and Given, 2021). Some literature indicates societal impact of research can be planned, identified, and evaluated, but this requires a significant paradigm shift in research culture and how academics work (Bornmann, 2013; Chandler, 2014; Smith et al., 2020). Given these shifts, it is critical to examine the implications for academics' information behaviours as they engage in societal impact work.

Societal impact creates new expectations of researchers.

While many academics routinely undertake research that benefits society directly, they are in the minority; their community engagement and societal impact activities typically receive little recognition or reward (Kelly, 2019). Impact-related activities involve specialised skills, time, and resources (Oliver and Cairney, 2019). There is consensus that achieving societal impact requires genuine engagement with potential beneficiaries, including the development of trusting relationships (Morton, 2015; Nowotny et al., 2003; Weiss, 1979). Yet, these relationships are highly contextual (Boaz and Nutley, 2019) and take time to foster (Cherney et al., 2013; Fecher et al., 2021). Information behaviour scholars have not yet explored academics' experiences when designing for impact, or how researchers come to establish successful, ongoing relationships beyond academe.

Involving community, industry, and government stakeholders in research design and implementation brings epistemological, methodological, and project management challenges, (Bergold and Thomas, 2012). Researcher-stakeholder interactions involve '*a multidimensional conceptual space of social relations patterns, collaboration, information sharing, and adaptations*' (Steinerová, 2019). As researchers must adapt their usual practices to engage stakeholders, institutions must reframe expectations and support development of genuine partnerships and participatory practices (McCabe et al., 2021), while considering disciplinary norms, funding agency expectations, and institutional requirements (Kelly and Given, 2023). Turnhout et al. (2020) suggest collaborations must embrace diverse perspectives and view coproduction as both knowledge making and political practice. Thus, academics require specialised knowledge and skills to foster interdisciplinary relationships across research paradigms, and with expert stakeholders.

Academic information behaviour in changing times

Studying academics' use of scholarly information has a long history (Sahu and Nath Singh, 2013), while research on information behaviours in collaborative practices, community engagement, and career transitions is nascent (e.g., Poole and Garwood, 2018; Kelly and Given, 2023; Willson and Given, 2020). Several studies demonstrate the value of informal information sources for academic work, including peers and professional networks (e.g., Given et al., 2023; Gordon et al., 2020), and the importance of information environments within universities and social interactions for information access (e.g., Miller, 2015; Steinerová, 2019; Willson and Given, 2020). The shift towards societal impact presents new information behaviours when engaging with stakeholders (e.g., Du and Chu, 2022; Zheng and Pee, 2022). For example, Given et al.'s (2015) study of academics' impact-related information behaviours identified the need for practical support in building and maintaining relationships for impact work.

Research design

This exploratory study used constructivist grounded theory to guide research design, including inductive, iterative analysis (Charmaz, 2014). This approach builds theory and meaning from participants' experiences and perspectives to generate interpretations (Bryant and Charmaz, 2007; Charmaz, 2014). This paper reports on one aspect of a larger study investigating impact-related information behaviours and environments in universities.

Following university ethics approval, 27 semi-structured interviews were conducted with academics at various career stages, working in sciences, social sciences, humanities, arts, and design at 18 Australian universities. Participants were recruited through social media, direct emails, and snowball sampling, and interview questions were piloted in three initial interviews, to refine questions and interview approach.

Interviews asked participants questions about their experiences of impact work, including what societal impact meant to them, the organisational, professional, and social factors influencing their work, their interactions with information and support, and how they developed their approach to impact work. Interviews lasting approximately 60 minutes were fully transcribed. Analysis involved writing analytic memos documenting emerging themes and initial coding reflections, inductive, iterative coding, and final theme generation following completion of all interviews. The results address the overarching research question for this phase of the larger project: What are academics' information behaviours for impact work?

Theoretical framework

Social exchange theories address individuals' interpersonal interactions, including reciprocal obligations (Molm, 2009; Cropanzano et al., 2017), but focus on the transactional nature of relationships (Mitchell et al., 2012). Fiske's Relational Models Theory examines relationship interactions and the meaning of material things (Fiske, 2004, p. 7): communal sharing, which involves collective responsibility; authority ranking, where status determines resource access; equality matching, involving balance reciprocity and even distribution; and market pricing, involving allocation of a value to exchanges (Baumeister and Vohs, 2007). Fiske suggests '*people string the models together and nest them hierarchically in various phases of an interaction or in distinct activities of an organization*'" (1992, p. 711); over time, one model may become dominant (2004). The four models represent the structures through which people interpret situations and make decisions using '*socially transmitted prototypes, precedents and principles*' (2004, p. 4), while relationships '*coordinate and evaluate each other's actions*' (2004, p. 11).

Each model requires people to have differing levels of information about each other and the relationship context. In communal sharing information about who can access a resource is required, but equality matching requires detailed information of the terms of equal sharing (2004). The models help interpret '*social life as a process of seeking, making, sustaining, repairing, adjusting, judging, construing, and sanctioning relationships*' (Fiske 1992, p. 689),

with information behaviour implications. These models informed analysis in our study by aiding interpretation of the structures and processes underlying relationships (Blois and Ryan, 2012; Zakharin and Bates, 2023). However, previous studies applying Relational Models Theory have not attended to relationships' information behavioural aspects. The results address this gap, and inform development of a refined model incorporating relational-information practices for impact work.

Findings and discussion

Overall, the findings demonstrate that relationships between academics and external stakeholders provide rich information environments bringing fresh perspectives, experiences, knowledge, ideas, and ways of working through reciprocal, iterative information exchange. These relationships involve activities and experiences that convey tacit and explicit information not otherwise available in codified sources (e.g., journal articles), documented research practices, or other academic sources (e.g., collegial advice).

Impact relationships shaped participants' information behaviours throughout the research lifecycle; these interactions ranged from brief exchanges, to ongoing, deep relationships. Relationships helped interviewees identify knowledge gaps, articulate needs, access and apply information, create new knowledge and integrate stakeholders into research practices.

Informed by Fiske's model, four relationship elements that enabled interviewees' information behaviours emerged in analysis:

1. Curiosity to identify information needs and develop new, collaborative understandings;

2. Reciprocity to foster two-way information sharing and ensure mutual benefit;

3. Trust to enable seeking and encountering of new information while attending to affective implications of relationships; and,

4. Engagement to support iterative information use and information creation.

A model of Relational-Informational Impact Practice was developed that reflects how relationships and information behaviours combine to develop shared understandings that enable societal impact.

Curiosity to identify information needs and develop new, collaborative understandings

Interviewees were motivated to develop stakeholder relationships by innate curiosity, while understanding the importance of gaining different knowledge and perspectives to inform their work. Interactions provided new ways to gather contextual information and new perspectives to frame a research problem. For example, Tanya (Associate Professor, management), attended industry conferences, explaining 'I like to hear and I like to know that I'm fine ... and that I'm informed'. Similarly, Baden (Full Professor, environmental science) 'read grey literature and technical reports' to address knowledge gaps and gain the understanding needed to work with industry partners. The importance of seeking different information sources to foster understanding of research context reflects Steinerova's model of academic information ecologies (2019), where information is socially constructed. Within Fiske's Relational Models Theory, information about each party forms the basis of each model and how terms of exchange are understood (2004). Interviewees' curiosity orientation guided the structure of research projects, and informed engagement strategies to address stakeholders' unique contexts.

Some interviewees described this as intellectual humility, accepting that their expertise was limited. They saw interactions with stakeholders as learning opportunities, even when this felt uncomfortable or challenged their confidence in their own expertise as researchers. Matthew (Senior Lecturer, information technology) acknowledged a researcher is 'not the expert' in the impact context; rather, 'a community group or government - they're the experts in their field'. Stakeholder interactions also require patience and respect for different communication styles and work practices, to appreciate the insights provided. Keith (Full Professor, design)

reflected on needing to take time to understand someone's context. He explained '*some of my greatest projects...I would sit with someone, and I think, 'They've got no idea. They're strange' [and then] some of them turned out to be my best clients and I've built really strong relationships'.*" Fiske (1992) identifies elements related to curiosity and humility as effective in communal sharing. For the interviewees, learning-based interactions required subordination to another expert, as researchers became aware of their knowledge gaps and sought external advice. The relative status and expertise of academics and stakeholders in an impact relationship is often framed as a power imbalance (McCabe et al., 2021), reflecting Fiske's (1992) authority ranking. For the interviewees, privileging stakeholders' perspectives and knowledge authority was critical for impact success.

Curiosity also predisposed interviewees to engaging with external stakeholders without preconceived goals, enabling serendipitous information discovery. Interviewees accepted that interactions may provide useful insights, or not, and that new insights could need time to develop. For example, Bridget (Senior Lecturer, Education) noted '*sometimes [stakeholder events are] totally irrelevant, but there'll be something either about the way the person's presented or an idea that it's triggered*' that makes attendance worthwhile. Similarly, Keith met with businesses to explore new product ideas to understand '*what they need and then...try to link [my] expertise*'. This approach aligns to Dervin's sense-making, where individuals construct understandings within a social context (1998) and reflects the value of positioning oneself in a situation where serendipitous discovery can occur (Bird-Meyer et al., 2019). Interviewees' early-stage relationships were often brief encounters, reflecting communal sharing, compared to formal partnerships, which require detailed understandings of all parties' roles (as per equality matching).

Curiosity also predisposed researchers to coproduction and adaptation to challenges. Designing projects to address stakeholder needs required some interviewees to change methodological approaches and to expand the information and skills needed for implementation. Baden felt impact work required academics to '*have some flexibility [to identify an] important issue...And if it's not your [usual] methodological approach you've got to decide: let someone else do it or you change what you do*'. This willingness to adjust methodologies reflects foundational principles of participatory design (Bergold and Thomas, 2012). Fiske (2004) represents adaptation and flexibility as fundamental to social relationships; those individuals who assess and adapt approaches to interactions are advantaged. While it is well understood that curiosity can be a precursor to identifying one's information needs, and can motivate information seeking (Given et al., 2023), in the context of this study, it is distinguished by a perspective that looks beyond academe and interviewees' own areas of expertise.

Reciprocity to foster two-way information sharing and ensure mutual benefit

All interviewees shared information with stakeholders (formal partners or new acquaintances) throughout the research lifecycle, using a wide range of activities and formats, to enable societal impact. Information sharing was framed as a reciprocal activity, providing something of value to another person; this was conceptualised variously as a direct information exchange, a social responsibility, being a *good* colleague, meeting obligations, or balancing possible future value. Information provided included tangible artefacts (e.g., documents, images, products) and insights (e.g., awareness, realisations, ideas). Reciprocity is central to Fiske's (2004) model of equality matching in relationships, as represented by a conscious balancing of inputs and value received by each party. However, the concept of reciprocity detailed by the interviewees indicates a much broader concept of wanting to provide societal benefit through interactions with individuals, and limited concern for personal rewards. Overall, interviewees' orientations towards reciprocal information sharing were reflective of university missions, as institutions designed to foster social good (Marginson, 2011); this is

consistent with information sharing practices between academics (Fullwood et al., 2019).

Interviewees engaged in reciprocity through information exchange, which generated goodwill and trust even in brief interactions. Individuals shared expertise through (for example) giving media interviews, presenting to interest groups, and writing blogs. Interviewees' intentions were altruistic, viewed as a service obligation to communities who could benefit from research. Angela (Associate Professor, fine arts), for example, was regularly '*asked to do...public lectures*' in art galleries. Most interviewees did not expect to receive a specific reciprocal benefit for such activities; rather, personal satisfaction in raising awareness and interest in research was sufficient reward. This reflects intellectual generosity and belief in the social good mission of universities (Macfarlane, 2017), a feature of Fiske's communal sharing model (1992).

Many interviewees learned from experience that speculative information sharing (e.g., presenting at industry events) could lead to serendipitous encounters with potential partners or individuals with critical impact-related insights. Interviewees often took calculated risks that such engagements could yield benefits. Keith acted opportunistically, volunteering '*for various events and engagement activities because you're then, there and presenting what you do. And if one out of 10 [helps move your ideas forward] a 10% hit rate in this work isn't too bad*'. Others took a more strategic approach, by sharing expertise with stakeholders in ways that were not costly, but were viewed as potentially beneficial to that person or organisation. Cameron (Full Professor, design) developed a gift protocol

> to offer [advice] at no or low cost to a partner, as a way of demonstrating value, good faith, positive kind of possibilities for collaboration. [It's an] offering to say, 'here's something that I'll just give you with...no obligation,' but actually is a way to open a door to further conversation.

This approach to information sharing combines communal sharing and equality matching, where individual sharing instances are not expected to receive equal benefit, immediately, but over time equates to the benefit of a partnership. This approach echoes information sharing identified by Talja (2002), including strategic and social sharing in collaborative research activities.

Interviewees also shared research outcomes beyond immediate stakeholders, such as to special interest groups and the general public, through plain language reports, articles in The Conversation, training materials, and social media posts. While some outputs were required as part of partnership agreements, others were created and shared to contribute broadly to social good. These outputs generated interest leading to new contacts, increased awareness of research outcomes, and served as reputation-enhancing opportunities. Erin (Research Fellow, biology) produced reports and factsheets for project partners, which were also shared publicly '*on their website and available for anyone interested in the area*'. Similarly, Kate (Full Professor, cultural studies) allocated project funds for *photography for public reports* and gave presentations to raise awareness of research. She found '*based on the visibility of...the report and the public speaking I've done about it, [government and industry] knew that I could work in that kind of space*'.

Sharing research findings publicly is a fundamental element of successful research communication (O'Connell, 2019); however, public engagement also requires specific skills, time, and resources (Kelly and Given, 2023). Tanya (Associate Professor, business) echoed many interviewees' concerns about the time and energy required for community engagement, describing such work as *free labour* for the people and organisations who benefit, often without tangible, reciprocal benefits for researchers. When information sharing is designed into projects (e.g., providing time and funding to support community engagement), academics and stakeholders can share widely with communal sharing intentions. However, when all parties are expected to engage in additional work (often unrecognised and unrewarded by their employers), interviewees were more inclined to

consider the future benefit from an equality matching perspective.

Interviewees indicated that open information exchange created transparency in relationships, supporting different perspectives, investment in project activities, and acceptance of findings. Interviewees involved in collaborative, participatory research shared information on progress towards project goals, including data analysis, and pre-publication findings, with partners reciprocating with data, technical knowledge, and feedback. These exchanges occurred in formal and informal activities (e.g., meetings, document sharing, presentations), which kept everyone informed and enabled clarifications. For example, Keith shared '*an updated [live, online] project report...throughout the project. And because we work in visual means – it's the sketches, the product development, the CAD, the prototypes, everything documented*' that were used to seek stakeholders' feedback. For other interviewees, an informal approach of calling or texting regularly, and sharing interesting information with stakeholders, fostered interpersonal connections. Melanie (Full Professor, design) explained they '*might text people something*', or being a '*generous and good colleague...tag people on posts [or] refer them to others*', despite being very busy. Similarly, Renee (Full Professor, biology) reflected on the importance of generosity in reciprocity, explaining '*You have to find a generous person in this partnership, and you have to both get an outcome that you want*'. This generosity and appreciation often lasted beyond the end of a formal project partnership, where interviewees stayed in contact by sharing information. Carrie (Associate Professor, Education) maintained connections with past partners by letting '*them know that I've presented at a conference, or [sending] an update on a paper, or if I continue to use the work in some way, I might just drop them an email*'. She explained the relational value of these types of information sharing experiences, noting '*it's amazing how much people just like to know they were thought of [and] sometimes they'll reach out and say, 'can we connect again [to do] something different?*'.

The prevalence of communal sharing in interviewees' established relationships aligns with Fiske's (1992) development of this model. Informal information sharing is an important source of information in academic and professional contexts, and in everyday situations (Given et al., 2023, 245). Collaborative reciprocity is sometimes framed as guarding against being extractive and valuing lived experience and cultural knowledge as equivalent to scholarly knowledge (Higginbottom and Liamputtong, 2015). The interviewees prised external relationships as opportunities for information exchange, leading to personal development and increased knowledge, and rewarded through serendipitous information discovery. In formal, contracted partnerships, interviewees did not define their exchanges in terms of market pricing and meeting contractual obligations. Rather, the relationships and goodwill created by generosity and personal attention contributed to researchers' reputation with stakeholders, with significant potential to influence future work.

Trust to enable seeking and encountering of new information, while attending to affective implications of relationships

Establishing and maintaining trust in relationships enabled interviewees to access information that would otherwise be unavailable. Trust was established early in relationship development through interactions that enabled understanding of each party's interests, goals, and what they offered the partnership. The results indicate that developing and maintaining trust was purposeful and conscious throughout, with collaborators being honest about expectations, requirements, limitations, and the risks involved in research and impact activities.

In many projects, for example, researchers sought specific information from partners, such as technical expertise or the reasons behind decisions. Yet, for partners to feel comfortable sharing such information, particularly with respect to commercially-or culturally sensitive topics, they needed to trust the researchers.

Curtis (Lecturer, art) emphasised the importance of thinking of 'others' needs [to] build up the trust', explaining that it is important for researchers to 'stick to what you have said. You cannot over promise, but once you promise you have to deliver that promise'. Similarly, Baden considered trust between researchers and stakeholders 'the biggest pathway to adoption [of research innovations] and impact, [with] building that trust and rapport... the biggest way to do it'. Trust is not mentioned explicitly in Fiske's models, although it is implied in assumptions that individuals will operate according to communal obligations, equality of access, status, and at agreed prices (1992, 2004). However, trust is recognised as an important element of information behaviour in academic collaborations with community (see Kelly and Given, 2023; Pilerot and Limberg, 2011; Wilson, 2010), and as an important relationship factor in successful academic and industry collaborations (Rybnicek and Königsgruber, 2019).

Interviewees represented themselves deliberately in ways that encouraged stakeholders to trust them and to be forthcoming in responses to researchers' information requests. Heather (Research Fellow, sociology), for example, developed trust with communities by minimising her status as an academic; she shared 'information in a format that makes sense. So academic lingo is not really useful ... In fact, even calling myself 'Doctor'...can be off-putting [to stakeholders]'. Similarly, Ryan (Full Professor, international development) said 'if you need to build relationships, you need to build trust. You need to learn how to speak [community members'] language'. Fostering trust also involved being open to being questioned by the community and allowing extra time in the project for these exchanges to happen. Carrie, reflected on the skills needed 'to be able to explain what you're doing and why it matters', noting that academics 'need to do that really slowly and carefully and allow people to question you. So, you need some humility about what you're doing'. The importance of communicating information in a language that is accessible to stakeholders is a key element of effective knowledge

mobilisation for social change (Cooper et al., 2018).

Establishing trust was also influenced by the type and location of interactions. Interviewees were aware that information about their capabilities was communicated as much through personal appearance and physical location, as through words. Matthew, felt researchers 'need to go and meet people and...talk to people face to face'. Similarly, Keith believed researchers needed to visit a potential partner's premises because he assessed 'their facilities and [tried] to then create projects that align specifically to their facilities'. However, he also invited them to campus to make potential benefits tangible by showing that the partner that the 'product that is going to make you money [as it's being developed using] the absolute latest of equipment'. Information behaviour scholars have shown that material and embodied experiences create and share information and contribute to sense-making (Olsson, 2016). This is also important for building trust with potential research collaborators.

Navigating issues of trust also revealed how affective experiences and emotions influenced interviewees' impact-related information behaviours. For example, to build rapport with community groups, Matthew felt he needed to put himself in the position of 'cold calling people and feeling like a fool and telling the people you feel like a bit of an idiot' to seek needed information. Other interviewees undertook significant amounts of engagement work, often with unintended emotional consequences; for Curtis, for example, engaging in this work resulted in burnout and the need to pull back from the face to face activities. Interviewees were also aware of stakeholders' emotional responses to exchanges and felt a sense of responsibility for both positive and negative reactions. Renee was disappointed that her institution did not 'welcome [my partners] onto campus' and that these long-standing partners felt they were 'not really wanted'. Interviewees discussed weighing the emotional effort engagement activities required with the potential benefits they might produce. Information behaviour research recognises the importance of affect and emotion in how people

interact with and respond to information (Nahl and Bilal, 2007), with studies identifying the effect of emotions on academics' responses to their environments (Willson and Given, 2020). Fiske also considers emotions as motivating factors in people seeking and sustaining relationships (2004), including building trust between parties. Establishing and maintaining trust facilitates seeking and encountering of information between academics and stakeholders by establishing a shared understanding of each other's needs and expectations, just as the lack of trust inhibits information behaviours (Savolainen, 2016). Impact work may also position academics at the boundaries of their institutions, disciplines, and their professional expertise (Kelly and Given, 2023), where establishing trust can challenge self-image and reputation.

Engagement to support iterative information use and information creation

Genuine, ongoing engagement in research impact relationships provides an information environment that informs the development of research projects, methodological decisions, the creation of new knowledge, and research practices. The iterative nature of relational information exchange enabled interviewees to apply information and test out ideas with stakeholders at various points in their projects. This enabled researchers to develop confidence and skills, and to gain a more complete picture of their stakeholders' interests, the contexts shaping the research problem, and potential avenues for effecting change. The repeated interactions between a researcher and an individual stakeholder allowed for trial and error, and risk taking. This reflects interactions between academics who '*bounce ideas*' off each other to work on new projects (Willson, 2022, p. 811) and the importance of 'alliances' in information sharing (Tabak and Willson, 2012, p. 113). This evolving practice helped researchers develop their identities as researchers. Baden, for example, referred to the importance of building rapport with stakeholders, while noting that researchers do this within their institutions, as well: '*You have the same rapport with your research colleagues in universities.*

You just build rapport with other people in other industries'. The benefit of recurring interactions was that stakeholders' input to each stage of research ensured continued alignment and shared goals around the problem being investigated and sharing of responsibility for the impact outcomes. Ryan found that because he engaged daily with stakeholders '*it is demand led [and the stakeholders'] appetite for uptake is clear. And therefore, we are providing them real-time feedback on what is going on, they're not waiting for publications written in three years' time*'. Relationships involving regular, iterative exchanges of information reflect Fiske's (2004) equality matching model, which involves a greater '*burden of information collection, storage and processing*' (p. 24) to manage interactions.

Interviewees' relationships enabled creation of non-scholarly outputs that were disseminated broadly, through blog posts, social media, and news media interviews helped researchers extend the reach of their work, often resulting in new connections and collaborations. However, as Paul (Full Professor, policy studies), reflected, there was a common '*perception [within universities] that things like writing for public media [and] The Conversation...are not really valuable things to do in terms of being recognised for career development purposes*'. Several interviewees referred to the additional, unrecognised work involved in developing and maintaining relationships, which was largely *invisible* and unrewarded within universities and academic disciplines. These concerns align to Kelly and Given's (2023) findings on researchers' experiences with community engagement work. The creation of non-scholarly outputs represents both a communal sharing of information with the public, as well as a reciprocal exchange with partners, as per Fiske's models (1992, 2004). However, as the creation of non-scholarly outputs requires resourcing, increases academic workload, and receives limited institutional support or recognition, this challenges the communal sharing model, overall. The differential value placed on this work by universities compared to external organisations reflects Fiske's model of market pricing. Fiske indicates that a mismatch

in models can create problems for all, and something institutions must address.

Those experienced in engagement often shared their expertise with others and influenced research governance approaches at their universities. Some provided guidance to colleagues, wrote articles, provided mentoring to junior researchers, and presented workshops and seminars. Baden gave lectures to students on developing research partnerships, noting their response: '*their eyes open and they say 'ohh wow. That's how you do it' and... 'No one told us that*". Several interviewees also reflected on their own early career experiences and the importance of learning about engagement from others, with Carrie explaining the value of being able to '*see someone else do it*'. Their sense of obligation to those less experienced reflected communal sharing on the part of senior academics; but, there was also an awareness that their role in mentoring and providing advice could be a drain on their time, particularly when unrecognised and unrewarded by their institutions.

Model of Relational–Informational Impact Practices

These findings informed the development of the Relational-Informational Impact Practice Model (see Figure 1), which links the four elements of relationships (i.e., curiosity, reciprocity, trust, engagement) that enable information behaviours and and operate simultaneously in relational-informational impact work. However, relationships are dominated by communal sharing activities, but without the obligations of communal relationships and equality matching, and without the structured reciprocity of equality-based relationships, noted by Fiske (2004). Rather, communal sharing in this context exists in relation to a shared interest or concern, without mutual obligations, and that reciprocity within an equality matching model allowed for serendipitous information discovery, delayed rewards, and unequal value. There was no evidence that researchers and stakeholders were operating within a shared understanding of relationship models in early-stage relationships, nor that this affected their willingness to share information, as is noted in studies in business (e.g., Boer et al., 2011).
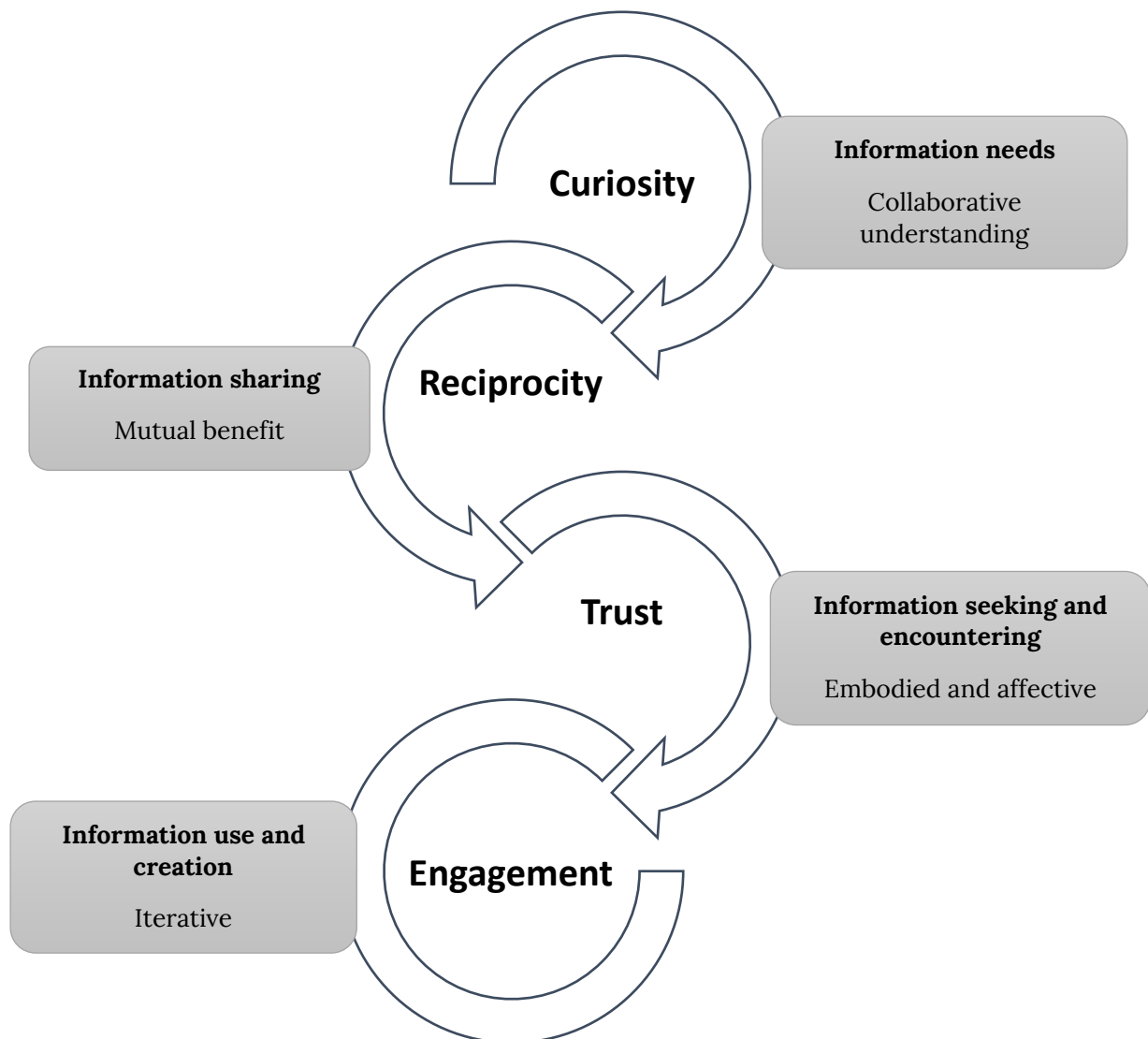
Figure 1. Relational-Informational Impact Practice model

As noted in Figure 1, relationships at all stages were characterised by all four elements, and were deeply connected to researchers' information behaviours: curiosity, reciprocity, trust, and engagement. Curiosity involves an openness and patience towards others' perspectives, intellectual humility, flexibility, and undefined expectations of reward. Reciprocity implies a binary exchange of input and output involving the individuals in the relationship (Fiske, 2004). In this context reciprocity is more broadly framed as generalised reciprocity (Wasko and Faraj, 2000), where an individuals' inputs are rewarded in less tangible ways, such as goodwill or reputational boost, and with enhanced access to information. Trust provides a currency for gaining access to information, overcomes perceptions of status, and acknowledges the embodied and affective information conveyed in interpersonal interactions. Finally, engagement identifies the iterative and temporal qualities of relationships, the different forms of engagement, and the creation of new knowledge this enables.

These four elements supported researchers' information behaviours for impact work by providing the values and dispositions necessary to render relationships as generative information environments. These elements extend Fiske's (2004) Relationship Models Theory by providing evidence of the conditions necessary for individuals to understand and interact with others, and by introducing information behaviour as the process of exchange.

Conclusion

Societal impact work creates new information needs and information behaviours for academics. While universities explore how to encourage impact related activities, academics contemplate the implications for research practices, funding, and outputs. Limited understanding of the information behaviours associated with impact work means incentives, support, and resources are potentially misaligned with academics needs.

The findings show that establishing and maintaining relationships creates a rich information environment that enables academics to develop understandings and skills needed for impact work. The Relational-Informational Impact Practice model can guide academics and institutions on approaches to establishing new relationships and the impact-related support needed.

Our findings represent a shift from framing societal impact work as involving experiences and outcomes that are purely transactional, or that generate mainly economic returns on investment, to demonstrating that this work involves relational-informational engagement for mutual benefit. This is a critical distinction, as current (economically motivated, transactional) expectations may produce very different outcomes within universities (e.g., the provision of support for impact-engaged researchers), within disciplines (e.g., the value

of non-academic research outputs), and within community, industry, and government groups (e.g., the value of researchers' expertise). Relational-informational impact practices require very different supports and rewards, including interpersonal skills development and information sharing strategies. The model provides researchers with a guide to the information behaviours that will best support impact work.

As this study was limited to one country (Australia), additional research is needed to explore potential, local differences (e.g., government impact priorities). Also, while the data were analysed across participants, for common patterns, it would now be valuable to gather additional data from more individuals, to better understand the unique benefits and constraints of specific contexts. This study contributes to the limited research on relationships as sites of information behaviour related to impact work, however, more research is needed. There is potential for further research to understand how relationships change as they mature and the implications for the four elements identified. It is possible that on a spectrum of relationship maturity, some elements are more prominent or require more effort. It would also be valuable to explore the perspectives of stakeholders involved in these relationships and assess the applicability of the model to their experiences. Developing a more holistic understanding of the conditions needed to enable impact work, will assist academics and their institutions in navigating the implications for research practice.

Acknowledgements

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