



The Influence of Goal Setting Autonomy and Commitment to Organization Goals on Performance: A Mediation Moderation Model

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Abstract

This study examines the influence of goal setting autonomy (GSA) and commitment to organization goals (COG) on financial performance. We develop and test hypotheses using a rich dataset of 209 salespersons and their managers' participative goal setting practices in a complex multi-task sales environment in the New Zealand real estate industry. In this industry, managers attempt to motivate workers by using autonomy in setting performance goals. Using Structural Equation Modelling (SEM), we find that both GSA and COG encourage worker behaviour towards performance. Our data also reveals that GSA and COG can have a detrimental effect on workers' attitude and effort towards some individual job tasks that in turn can have negative performance implications. By providing a micro-level understanding of how GSA and COG motivate a worker's attitude and effort toward individual job tasks, we shed light on the importance of capturing and managing knowledge that managers need, to effectively grant workers more autonomy in goal setting. Our results thereby reveal unexpected limits of GSA as a design choice for managers or organizations that seek to decentralize decision making.

Keywords Knowledge management · Organization design · Decentralization · Participative goal setting · Work effort · Work attitude

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Introduction

In a knowledge centric world, flatter organizations are often considered to be an effective way to leverage the knowledge and competence of frontline workers with less direct intervention (Lee & Edmonson, 2017; Muzam, 2023). This has resulted in a debate concerning the role of managers whose jobs are being redefined in decentralized organizations (Martela, 2023; Foss & Klein, 2023). As such, organization design requires a refined approach to control (Joseph & Sengul, 2025); where managerial oversight is becoming highly dependent on securing knowledge to understand the specifics of the task environment (Dobrajska et al., 2015; Sengul & Obloj, 2017; Gambardella et al., 2020).

In decentralized organizations, understanding how to manage the goal process and associated knowledge processes (Joseph & Sengul, 2025; Muzam, 2023; Ouedraogo & Rinfret, 2019) to motivate workers to autonomously engage in goal-directed behaviours towards performance, is becoming increasingly important (Bandhu et al., 2024; Reitzig, 2022a; Puranam et al., 2014). Providing workers with increased autonomy over job tasks usually elevates motivation and worker effort (see Gielnik et al., 2015), where both result in increased performance, as shown in a recent meta-analysis (Van Iddekinge et al., 2023). Less is known on the goal internalisation process (Ryan & Deci, 2006, 2020; Koestner et al., 2015) at the intersection of the organizational meso-level, where middle managers operate, and the micro-level, where individual workers engage with their daily tasks. In particular, the extent worker effort, as well as attitude, towards core job tasks are motivated by managerial design choices concerning goal autonomy, to positively influence performance outcomes (Raveendran et al., 2020, 2023). This study fills a gap in the literature by examining the links between GSA as a specific participative knowledge management process and its influence on salesperson task choice and performance. Using a unique dataset of 209 real estate salespersons, in the New Zealand real estate industry, we examine how extrinsic motivation, shaped by the use of goal-setting autonomy (GSA) that a manager individually determines for each salesperson, (hereafter referred to interchangeably with worker), and intrinsic motivation, reflected in subordinates' commitment to organizational goals (COG), influence workers' attitudes, effort, and overall job performance. The highly regulated and competitive nature of real estate, with its well-defined multitask setting, makes GSA a highly relevant activity for which managers are required to have detailed knowledge regarding the job tasks, and how every subordinate is executing them in their daily work.

Determining GSA is, therefore, a discretionary activity where managers rely on a range of GSA categories, so individual workers can experience full, various degrees of, or no discretion over goal setting. We capitalize on this by using data on 30 industry approved job relevant tasks workers can engage in and obtain data on salespersons' attitudes and effort concerning these tasks, and how their managers determine GSA for these salespersons. Using structural equation modelling (SEM), we investigate the role of GSA, COG, the attitude and effort salespersons have toward the multiple tasks, as well as the financial performance implications. We find that managers are required to have a surprisingly well-developed understanding of how individual tasks are executed by workers. This suggests that decentralization of goal setting

requires managers to have more, *not* less, knowledge of lower-level activities than in conventional hierarchies without GSA.

The article is structured as follows: (1) we review relevant literature that synthesize organization and job design, and goal setting with decentralized decision making and worker autonomy, as a knowledge management process and develop the research hypotheses; (2) we describe the analytical approach we use, data collection, analysis, and our findings; (3) we discuss contributions, implications, and limitations.

Literature Review and Hypothesis Development

Job Autonomy and Multiple Job Tasks

Firms are increasingly confronted with a range of manager-worker opportunities and challenges, where knowledge has become a key contingency factor (Alavi & Leidner, 2001; Lam & Lambermont-Ford, 2010; Joseph & Sengul, 2025), in developing a fit between internal and external work conditions (Hakonsson et al., 2023). Worker opportunities now range for example, from working-on-demand via mobile apps, to less conventional work norms, as can be found in the gig economy (Wood et al., 2019) and that often require increased flexibility in location and time of work. The diversity of such work environments has important implications for firms, who seek to effectively design jobs with motivating tasks that can be accomplished (Parker, 2014; Puranam, 2018), and that fit the organization's competitive environment.

Job autonomy has become an important feature in many organizations as it has been positively associated with task variety creativity and knowledge exchange between managers and workers (Llopis & Foss, 2016; Shariq et al., 2019). However, a central challenge for firms is how to align 'task system decentralization' with the complexity of the task environment (Karim et al., 2023). Such task systems are attractive for firms seeking to establish a less-hierarchical structure (Lee & Edmondson, 2017; Puranam et al., 2014), but, this does require detailed knowledge and its management concerning the effects of creating a 'relatively autonomous' environment (Zhao et al., 2022) and its impact on worker job performance (Zaim et al., 2019).

A job design that has participative properties and emphasises autonomy (Billinger & Workiewicz, 2019; Puranam et al., 2014; Puranam, 2022; Reitzig, 2022a) is intended to encourage a positive attitude in employees towards performance (Parker, 2014). As such, job autonomy promotes proactive motivation and work behaviour (Parker et al., 2010), where subordinates decide on the work tasks they engage in (Sisodia & Das, 2013). In a job that consists of multiple tasks, employees are likely to have different perceptions regarding the various subtasks, which we refer to as job tasks. Employees, mostly engage in job tasks that are core to the overall job (Zhao et al., 2022), while deemphasizing those job tasks conceived to be less relevant. The perceptions workers hold, reflected in their attitude and effort towards a job's tasks become important antecedents in understanding their influence on firm decision making and job performance outcomes. It is hypothesized that:

H1a Higher job task attitude is positively related to job task effort.

H1b Greater effort on job tasks is positively related to worker job performance.

Goal Setting Autonomy and Job Tasks

Goal setting has long been a key element of organization as it allows managers to directly and unambiguously define what is expected of subordinates. At the same time, in flat organizations, goal setting offers a unique opportunity to understand the knowledge required by organizations' (Idrees et al., 2023) regarding their willingness to grant autonomy. Goal setting autonomy (GSA) therefore plays an important role in organization goal process design, which ranges from managers granting complete autonomy, to retaining full control, over worker goal setting (Locke & Latham, 2015; Latham & Locke, 2018). Increased autonomy, typically based on positive past performance is intended to act as an external motivator that sends a persuasive message to workers to self-regulate their behaviour, to meet future performance goals that align with their organization's goals (Koestner et al., 2015). In other words, managers use GSA with the intent of creating a balanced psychological contract with workers that entail financial and social components (Coyle-Shapiro et al., 2019), to foster joint production motivation (Lindenberg & Foss, 2011).

We draw on Self Determination Theory (SDT) (Ryan & Deci, 2020; Bandhu et al., 2024) to examine the influence of GSA on subordinate attitude and effort toward individual job tasks. SDT suggests the behavioural intent of individuals is underpinned by internalizing extrinsic motivators, to become intrinsically motivated. The theory postulates that intrinsic motivation is enhanced when individuals' experience conditions that support the basic needs of self-determination, competence, and relatedness (Ryan & Deci, 2020). High autonomous motivation arises when perceptions of control are internalized, while lower autonomous motivation arises when individuals feel pressured by others to behave (Deci & Ryan, 2012).

The overarching intent of GSA is to encourage motivational autonomy in workers to set own performance goals to positively impact performance. This is underpinned by the rationale that GSA offers a mutual understanding and implicit worker-manager agreement (Agarwal et al., 2021; Holland & Scullion, 2021; Fantinelli et al., 2023) via a transactional and relational psychological contract that is based on reciprocity (Coyle-Shapiro et al., 2019). In other words, managers use their knowledge to adjust GSA based on worker performance, arising from how they engage in a job task such as selling (Ryan & Deci, 2020; Spreitzer, 2008). As the manager-worker relationship evolves (Griep & Vantilborgh, 2018), knowledge concerning how the reciprocal relationship functions become an important antecedent in decision making to trigger expectations by both managers and workers, where the latter will improve, exerting more effort on those job tasks that have positive performance implications (Locke & Latham, 2013; Zhao et al., 2022). While aspects of this relationship have been examined in the job of selling (Epler et al., 2023), to our knowledge the behavioral intent of workers on a disaggregated set of performance related job tasks, has yet to be investigated. We hypothesize:

H2a Higher GSA will positively influence attitude towards job tasks.

H2b Higher GSA will positively influence effort towards job tasks.

Commitment to Organizational Goals and Job Tasks

Commitment to organizational goals (COG) is argued to be an important part of the goal process and its design (Judge & Mueller, 2012; Van Iddekinge et al., 2023). COG manifests as a general attitude with intrinsic motivational properties (Klein et al., 2013; Deci & Ryan, 2012). The level of subordinates COG provides key information regarding their willingness (Bandhu et al., 2024) to closely identify with the organization's 'need to perform' (Zaim et al., 2019). Committed subordinates are typically unwilling to reduce their goal levels below what they believe would jeopardize their organization's goals (Meyer & Allen, 1991). Van Iddekinge et al.'s (2023) meta-analysis also finds significant positive associations between both mastery of goal orientation and performance goal orientation towards performance.

COG measures the 'state' of this psychological contract as an implicit reciprocal agreement and effectively a knowledge agreement between the worker and manager that firms can then use to inform their goal process decision making (Fantinelli et al., 2023; Luu, 2016). Workers with higher levels of COG usually have a positive attitude towards tasks considered to be mutually essential, for example, providing quality customer service (Vandenberghe et al., 2007). In addition, workers who exercise higher levels of commitment usually exhibit sustained effort in complex task situations (Deci & Ryan, 2012; Carver & Scheier, 2017). Furthermore, commitment typically takes time to develop, as does the attitude toward engaging in some preferred tasks (Meyer & Morin, 2016). This suggests workers with high COG should have enhanced judgement on the perceived value of individual tasks they choose to exert additional effort in. Hence, we expect COG to positively influence workers' attitude and effort towards job tasks and hypothesize:

H3a Higher Commitment to organization goals is positively related to attitude towards job tasks.

H3b Higher Commitment to organization goals is positively related to effort towards job tasks.

Autonomous Regulation and the Goal Process

A key reason that organizations may consider flatter structures with greater flexibility (Turco, 2016; Peng et al., 2018) and decentralized decision making (Foss & Klein, 2023), is to increase creativity and job motivation (Lee & Edmondson, 2017), often in environmental settings that are characterized by significant unpredictability (Billinger & Workiewicz, 2019). While the overall benefits of flat and decentralized structures have often been discussed, knowledge of the motivational influence on the manager-worker relationship are less clear. Cerasoli et al's., (2014) meta-analysis reported the interactive influence of extrinsic motivation (incentives) and intrinsic motivation on performance. They found intrinsic motivation predicted greater quality of performance, whereas incentives were a stronger predictor of quantity of perfor-

mance; concluding that incentivised and intrinsic motivation are not incompatible but rather should be considered simultaneously.

In the context of our study, we expect autonomous regulation in the goal process, as a form of self-regulation (Ryan & Deci, 2020), designed to motivate workers (Muzam, 2023; Forner et al., 2020), to occur from GSA and COG. It is expected that GSA as an extrinsic motivator will give partial autonomy over goal setting to positively influence goal internalization (Koestner et al., 2015). While COG, will provide a higher level of autonomy to intrinsically motivate workers to perform. As such, we expect both forms of autonomous self-regulation will lead to greater perceptions of behavioural control, self-determination and superior task functioning (Ryan & Deci, 2020; Koestner et al., 2015). Perceptions of control provide expectancy to assist workers in judging whether their effort will meet performance expectations (Grant, 2012; Zaim et al., 2019). Attitude then captures the extent workers evaluate their behaviour favourably. We hypothesise:

H4 *Higher (a) commitment to organizations goals and (b) goal setting autonomy positively influence the relationship between workers' attitude and effort toward job tasks.*

H5 *Higher (a) commitment to organizations goals and (b) goal setting autonomy positively influence the relationship between workers' effort toward job tasks and performance.*

The above hypotheses contain the fundamental theoretical arguments based on prior studies' insights concerning GSA and COG. What is missing in most of the prior literature, where organizations seek to decentralize, is how managers can understand and leverage the task environment confronting both managers and workers, and how to share this knowledge with workers. What is more, most prior studies on GSA and COG involve a singular task (e.g., in mostly experimental goal setting studies) or a few well-defined tasks (e.g. cutting lumber in the timber industry (Locke & Latham, 2015; Latham & Yukl, 1975)). While these settings are important for developing an understanding of mechanisms relevant in goal setting, they do not necessarily represent situations that are prevalent in many modern organizations, where individuals are assigned to many tasks that entail non-trivial interdependencies and that can often dynamically change (Miner & O'Toole, 2020; Muzam, 2023). As individuals are confronted with multiple tasks, they are challenged with how to effectively balance the time and effort they invest over these various individual tasks.¹ What is more, these tasks jointly aggregate to an outcome that often has direct financial performance implication. In many circumstances, the manager, based on her knowledge, would define a goal for the aggregate workforce, thereby establishing what is satis-

¹ Note that there are many ways to distinguish tasks. It is less effective (and partially also impossible) to develop distinct hypotheses for different task types. The hypotheses are therefore non-specific, where we rely on an exploratory data-driven approach to distinguish between tasks that are more, or less, performance related.

factory organizational performance, and leave it to the individual to decide how to engage with the various job tasks to achieve the overall goal.

GSA in this context is a highly relevant managerial lever, as it not only allows the manager to delegate some of the decision-making to the worker, but also forces the worker to critically reflect on what is individually achievable, and what is not; hence highlighting the critical importance of reciprocal manager-worker knowledge exchange that establishes a psychological contract. This creates a situation in which all workers carefully reflect on the means required for reaching a goal, so every job task is scrutinized in terms of its ability to contribute to goal achievement. Workers will, therefore, develop preferred tasks for which they will develop a positive attitude. This then will shape their willingness to engage with these various job tasks. Thus, one would expect these events should happen *without* managerial knowledge or intervention concerning workers' job task selection or execution, especially when there are high degrees of GSA, where managers obtaining this knowledge might be perceived as micromanaging.

Methods

Sample

At the time of the study, 17,000 real estate salespersons were registered with the Real Estate Institute of New Zealand (REINZ). Most of these salespersons (>95%) were employed by real estate firms, which are all small and medium sized enterprises, often family owned. To be a registered real estate salesperson, individuals must successfully complete a formal training with REINZ which includes learning the standard, including the legal tasks and skills (more below) required for preparing and completing real estate sales in New Zealand.

The first author randomly selected and invited 30 real estate firms, New Zealand wide, to participate in the study, where the request for participation included access to their respective salespersons and financial data on individual salesperson performance. The general managers of 18 small and medium-sized firms agreed to participate. From these firms, 36 branches participated, where managers had six or more years' experience, and were responsible between two and 250 real estate salespersons. Branch managers were asked to provide a list of salespersons who voluntarily agreed to participate in our study. One week later, we contacted these salespersons via e-mail to explain the study's purpose and how to access the online survey, where confidentiality was assured.

Initially, 215 salespersons agreed to participate. The online survey requested their demographics, each salesperson's individual goal setting, and attitude and effort toward those tasks central to their job in a multi-task setting used in their firm. That is, all these variables, including GSA and COG, varied on the individual salesperson level. Since online responses are typically low, follow-up telephone calls were undertaken two and four weeks after the initial email contact. For all participating salespersons, firms provided precise figures on (a) the individual performance targets for a given year, and (b) what the actual sales figures were. The present study utilizes

these figures for the current and previous year of analysis. We received usable data matching salesperson and firm variables for 209 participants.

This study was conducted in the New Zealand real estate industry for the following reasons. The industry is highly competitive and heavily regulated, which pre-defines what happens at environmental, organizational, and individual levels. Ranging from scope of possible strategies to the full range of individual tasks, i.e., multi-tasks deemed relevant for completing property sales in the real estate industry that all individual salespersons had to execute. At the industry level, the registration of salespersons and real estate firms is controlled, and precise regional sales figures are closely monitored by the government. There is also no variation in tax rates across regions that might complicate the interpretation of sales figures. Statistics New Zealand, a government agency, publishes accurate annual base statistics, such as the number of units sold, and average price per unit per region. These sources provide accurate industry-wide data, including the extent of overall competitiveness, as well as a good understanding of general trends in the sector, and regional differences. This industry is deemed to be highly competitive because New Zealand has experienced housing bubbles rather frequently (Greenaway-McGrevy & Phillips, 2016). These fluctuations significantly increased competition between real estate firms, between branches and individual salespersons that was in turn reflected in how goal setting was adapted. During our investigation, several institutions offered detailed information on registration, training, and task requirements of salespersons that we used to obtain a general overview of the industry, including the role of goal setting specifically.

The individual salesperson, as our main unit of analysis, represents a partially self-governing organizational entity that typically operates within the local branch of a real estate firm. Salespersons are typically offered much freedom by their manager to engage in those tasks they prefer, while they are simultaneously encouraged to pursue those tasks deemed relevant to their job that meet with the knowledge shared at an industry level via approved guidelines. This structural feature is ideal for studying worker goal setting since it almost perfectly captures the baseline model ‘manager-worker’, where the manager was responsible for broader organizational goal setting, while the salesperson was responsible for a more narrowly defined set of sales tasks and the financial performance that results from the execution of these sales tasks. This setup also organizationally focuses attention on the manager and the worker pursuing a singular goal, i.e., overall annual sales performance. Moreover, the manager’s and salesperson’s aligned interests (i.e., having higher performance), combined with the sector’s particularities described above, make goal setting a central activity for which managerial discretion concerning GSA is often applied and altered on the individual level. Specific adaptive approaches to goal setting can also be observed in the gig economy, where there are also different forms of participatory goal setting (Açıkgöz & Latham, 2022).

Data Analysis Procedures

Ly (2025) notes covariance-based Structural Equation Modelling (CB-SEM) prioritizes theory testing and model fit compared to PLS-SEM, and given the theoretical focus of the present study, CB-SEM was selected over other options (e.g., PLS-

SEM). Further, Hou et al. (2024) notes that CB-SEM requires normally distributed data and in the present study, skewness and kurtosis were within acceptable ranges (West et al., 1995) except for income, which was log-transformed.

Measures

Our Goal Setting Autonomy (GSA) construct is based on the literature, focusing on identifying goals as self-initiated, participatively set or assigned (e.g., Locke & Latham, 2013; Heslin & Wang, 2013). We conducted interviews with eight branch managers across five firms asking them to explain their approach to salesperson goal setting. We found the approaches used in extant research are all, to some extent, reflected in the way managers engaged in goal setting. At the same time, we realized that existing approaches may overly simplify what managers do, as they often eliminate options that managers, in our setting, were relying on: On one hand, managers relied on top-down goal-setting in which the salesperson had no say in the goal she/he was pursuing, and on the other hand, managers were also giving up any authority over goal setting, thereby granting some salespersons full autonomy. This spectrum thereby provides an expansive focus on the nature of autonomy (Parker, 2014) provided to workers in the goal process. The five examples in Table 1 represent standard responses across managers regarding how they define and refine the level of autonomy they grant to their workers in annual goal setting. The quotes in Table 1 also exemplify how we arrived at our operationalization of this key vari-

Table 1 Development of Scale for Goal Setting Autonomy

	Exemplary quote from a branch manager	Corresponding answer in survey (reverse coded for analysis)
1	“XX salesperson is new. She’s only been with us three weeks. She wouldn’t have any idea of what goal to set, so I set her goal for her.”	My goals are set: My manager sets them for me (1)
2	“XX salesperson has been with us 18 months. I sit down and go over her last annual target and how she needs to break things down into months and the number of units [houses] she thinks she can list or sell. Then we set her goal.”	My goals are set: I set them jointly with my manager (2)
3	“You know XX salesperson has been with us now for 10 years. He’s an average kind of performer who knows what’s required. I get him to set his goals and then he brings them to me just to check.”	My goals are set: On my own and my manager approves them (3)
4	“XX salesperson is up and coming.. been with us three years. I like to encourage XX to set his own goals and get him to check with me if he thinks he needs to. I trust him.”	My goals are set: On my own and I tell my manager (2)
5	“XX salesperson is a top performer. He works 80–100 hours a week.. We know these kinds of guys don’t need us to give them any help to set their goals.”	My goals are set: On my own (1)

able GSA. They enabled us to develop for individual salespersons a single-item construct with a 5-point Likert scale, based on the question “How are your personal sales goals currently set?” with the five response options shown in Table 1. Note that the scale includes options that prior studies have ignored, namely the two options at the extremes: On one hand, managers still set goals without involving the worker; on the other hand, managers give up their involvement completely.

The development of our second key variable, Commitment to Organization Goals (COG), also involved a review of the literature where we were unable to find a scale that adequately captures an individual’s commitment to their organization’s goal in the context of a multitask environment that entails GSA. Therefore, we also used the interview approach, talking with 20 salespersons, 10 branch managers, and three members from REINZ, asking them to explain at both a firm and an industry level, the structure and extent of standardization of worker goal and performance systems. We also sought to understand the extent managers believed salespersons would be likely to identify and commit to achieving this goal level (Hollenbeck & Klein, 1987). Access to this knowledge enabled us to develop a single-item construct with a 5-point Likert scale, where we asked how important it is for the individual salesperson, “to commit to meeting my sales targets agreed on by my firm”. Note that this formulation also considers that GSA introduces self-determination in the goal setting process that the specific formulation for the COG measure should reflect (for a discussion of the measurement of goal commitment, see Klein et al., 2001).

The development of the two constructs of attitude and effort by salespersons on core tasks also began with a literature search. We were unable to find a set of attitude and effort scales that closely related to the entire range of tasks relevant for a job in a multi-task setting. This led the authors to jointly interview 18 managers and 15 salespersons to identify all professional activities real estate salespersons engage in when conducting their job. What became apparent is that the salespersons had an attitude towards engaging in these tasks, as well as an understanding of the nature of effort that the salesperson would be exerting for each task. We identified 30 tasks necessary for the job, shown in Table 2, that ranged from mandated tasks, including learning land laws, to ‘voluntary’ tasks that can enhance the selling process. These tasks involved engaging with the community, as well as self-driven tasks such as consistently being in sales mode. We confirmed the list of necessary tasks by comparing it with industry training manuals that were later confirmed talking to recommended staff from the national regulatory authority (REAA) and the CEO and national training coordinator (REINZ) in the sector.

From this job task data, we developed two scales for each task. First, we captured Attitude towards Salesperson Task by asking the salespersons for the *usefulness* N of the task, coded 1=no use, 2=little use, 3=useful, 4=very useful, 5=extremely useful. Second, we conducted exploratory factor analysis to group the activities across related dimensions. We achieved six dimensions in total: Sales Craft, Reviewing, Time, Legal, Listings, and Basics. Such large-scale measures are problematic in structural equation modelling (SEM) and while Haar et al. (2022) used parcelling of items to drop from 15-items to 5 items representing the dimensions, and similarly, we followed Marsh, Lüdtke, Nagengast, Morin, and Von Davier, (2013) who suggests parcelling can only be conducted if dimensions are adequately robust. Thus, we

Table 2. Real Estate Salesperson Job Tasks

Activities	Brief Description	Factor Loadings
Sales Craft (3 factors, eigenvalues= 2.220+1.187+1.097, 56.3% variance).		
1. Follow leads	Follows up all leads	.752
Cold calling	focusing on calling established / known potential vendors as an initial marketing tool: also referred to as informed contacting	.694
Deal closing	Won't leave until the 'deal is done' or satisfactory stage of negotiation is complete	.654
After-sales task	Engages in after-sales task such as gift giving	.550
2. Reduce commission	Negotiates with vendor a reduced commission to close deal	.712
Negotiate	Negotiates a fair price between buyer offer and vendors expectation	.5656
3. Sales targets	Set sales unit targets for myself	.844
Sales plan	Developing a plan to buyers and current listings	.755
Reviewing (1 factor, eigenvalues= 2.092, 52.3% variance).		
Price reviews	Identifying current sales prices in local area	.835
Reviewing data	Reviewing historic price and market trends	.802
Identify listings	Targeting towards listing future properties	.703
Sales trends	Reviewing sales data from National real estate provider	.506
Time (1 factor, eigenvalues = 2.004, 61.1% variance).		
Time listing	Allocating time to being a listing salesperson	.836
Time selling	Allocating time to being a selling salesperson	.759
Community presence	Allocating time to build a profile in local community	.683
Sales mode	Allocating time to be in salesperson mode	.514
Legal (2 factors, eigenvalues= 1.806+1.313, 78.0% variance).		
Vendor explanation	Explain to vendor the sales and agreement process and provides professional code of conduct document	.900
Buyer Explanation	Explain to buyer the sales and agreement process and provides professional code of conduct document	.890
Land laws	Learning relevant land laws regarding ownership and transfer of titles	.885
Local laws	Understanding and applying local council zoning and building compliance laws	.845
Listings (2 factors, eigenvalues= 1.427+1.170, 51.9% variance).		
1. Refining database	Refines own database matching listings with buyers	.772
Buyer follow-up	Follows up with potential buyers with any relevant new listings	.650
Monitor competitors	Monitor other salespersons and private listings	.561
2. Sells own listings	Sells own listings to other salespersons	.812
Sells others' listings	Sells conjunctual listings from same or other real estate firms	.757
Basics (2 factors: eigenvalues= 1.823+1.036, 57.2% variance).		
1. Vendor No-sell	Advise vendor not to accept low price offers (if sale not urgent)	.871
Check conditions	Ensure buyer completes all conditions e.g., building report etc.	.635
Vendor feedback	Follows up with vendor at pre-offer stage with market feedback on price	.526
2. Sales methods	Learning all sales methods e.g., auctions, tenders	.845
Free advice	Offering free market advice to prospective vendors	.658

conducted SEM on each dimension to ensure they were adequate before conducting parcelling. Model fit was assessed using three goodness-of-fit indexes recommended by Williams et al. (2009): (1) the comparative fit index (CFI), (2) the root-mean-square error of approximation (RMSEA), and (3) the standardized root mean residual (SRMR), with a superior model is reflected in scores of $CFI \geq 0.95$, $RMSEA \leq 0.08$ and $SRMR \leq 0.10$.

Individually, all models for each dimension were robust. For example, Sales Craft (CFI=0.95), Reviewing (CFI=0.96), Time (CFI=0.93), Legal (CFI=0.99), Listings (CFI=0.99), and Basics (CFI=0.98). We then parcelled each dimension (combining items together) and conducted a factor analysis to show the six dimensions loaded onto a single factor. This was supported by the analysis: This was a good fit to the data: $\chi^2(df)=32.8(22)$, CFI=0.97, RMSEA=0.05 and SRMR=0.05. Having confirmed the 30 tasks, we combined them together to form a single construct, with a higher score representing salesperson's attitude towards greater usefulness in engaging in these tasks ($\alpha=0.84$). We create two types of Effort towards Salesperson Task constructs: (1) based on four tasks identified as more performance-focused and (2) the remaining tasks that are more non-performance-focused (more below). Second, we capture the Effort towards Job Task by inquiring about the effort that salespersons put into each of the 30 tasks. We asked, "How often they engaged in each task", coded 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often.

Further observations from the interviews with managers and senior salespersons showed that a distinction between important and less important tasks was a common practice in the industry. This distinction is also prevalent in prior research which found that individuals develop preferences over time, where they choose some job tasks over others (Hollenbeck & Klein, 1987), where knowledge of task choice was not always available to managers. To better understand this distinction, we conducted a preliminary correlation analysis that revealed four tasks core to the job (from the 30-tasks listed in Table 2) to be significantly related to our variables of interest. These four Core Job Tasks are: (1) Sales Mode, refers to the salesperson being on full alert (almost 24/7), to actively seek instant opportunities to build listings or to sell a house e.g., at a party, on the street outside the office, at a sporting event etc. (2) Community Networking, which refers to a salesperson establishing a strong community visibility and involvement, such as being the president of a voluntary community group. This relates to fostering trust in numerous relationships to secure potential future opportunities. (3) Land Laws refer to identifying, understanding, and communicating the legal requirements to clients from appropriate property Law Acts and amendments. (4) Informed Contacting involves salesperson actively avoiding contacting people with no personalised lead to the vendor, and instead focusing on calling established and known potential vendors in an endeavour to get them to consider selling or buying. As these activities did not correlate consistently or largely with each other, we keep these four performance-related activities separate.

We combined the remaining effort scores on the 26 remaining tasks which we label Salesperson Effort towards Job Tasks (Non-Performance) because these are not directly associated with enhanced performance, and because we want to include all identified job tasks from our analysis ($\alpha=0.81$).

Performance. Our dependent variable relating to financial performance was provided by the salesperson's employer that included a baseline salary and incentives. We measured a salesperson's annual *Income* representing their total income for the year, and this was log transformed to induce normality (Cohen & Cohen, 1983).

Control variables. We controlled three variables as Williams et al. (2009) warn that indiscriminate use of control variables in structural equation modeling (SEM) analysis is problematic. These were: real estate firm code (*Firm*) representing each of the

18 participating firms. This is to account for some firms outperforming others. We also controlled demographic characteristics of the salespersons, specifically *Education* (1=high school qualification, 2=university qualification, 3=industry specialty qualification) due to the links between higher performance and education (Mumford & Gustafson, 1988; Kuncel et al., 2004) and *Experience* is measured by the number of years a salesperson has been working in the industry. It is a discrete count data from one to five years (the latter represents five or more years).

Measurement Model and Analyses

Hypotheses were tested using structural equation modeling SEM in AMOS (v. 28) to assess the direct, mediation and moderation effects of the study variables. SEM permits complex path models like those hypothesized here to be tested (e.g., Cameron & Webster, 2011). Williams et al. (2009, p.543) define SEM “as an analytical approach that simultaneously combines factor analysis and linear regression models for theory testing”. It also allows alternative confirmatory factor analysis (CFA) models to be tested to enhance confidence in the hypothesized measures and their items. The hypothesized measurement model was an excellent fit to the data: CFI=0.95, RMSEA=0.07 and SRMR=0.04. An alternative model where the salesperson activities (attitude and effort toward job tasks) were combined resulted in a poorer fit: CFI=0.80, RMSEA=0.10 and SRMR=0.07. Overall, the hypothesized measurement model fits the data best and this was confirmed as being superior (at $p < 0.001$) to the alternative models (Hair et al., 2010).

We selected CB-SEM over PLS-SEM (partial least squares path modelling) due to current concerns with PLS such as the lack of methodological justification (e.g., Rönkkö et al., 2016) the limited capabilities to manage a range of problems that can appear in SEM (Rönkkö et al., 2023; Evermann & Rönkkö, 2023; Rönkkö & Cho, 2022).

We also tested the potential moderating effects of GSA and COG on salesperson’s (1) Attitude towards Job Tasks and (2) Effort towards Job Tasks in SEM following the approach of Haar et al. (2014) at 5,000 samples and 95% bias-corrected bootstrap confidence intervals, which follows standard practice.

Results

Descriptive and Correlational Analyses

Means, standard deviations, and correlations for the variables in the study are presented in Tables 3a and 3b.

Structural Models

Sonenshein and Dholakia (2012) note that one advantage of SEM is that it allows testing alternative models to determine the best fit to the data. For the hypotheses between the study variables, we tested two alternative structural models to determine

Table 3. Correlations and Means of Study Variables

Variables	M	SD	1	2	3	4	5	6
1. Firm	9.4	6.1	--					
2. Education	1.5	.80	.12	--				
3. Experience	3.8	1.6	.05	.07	--			
4. COG	3.7	1.3	-.03	-.13	-.02	--		
5. GSA	3.7	1.3	-.15*	.03	.07	-.12	--	
6. AtJT	4.0	.39	.12	.00	.12	.33**	-.07	--
7. EtJT(N-P)	3.9	.40	.21**	.00	.23**	.22**	-.03	.75**
<i>EtJT Performance:</i>								
8. Sales Mode	4.2	.92	.05	.10	.10	.21**	-.04	.42**
9. Community Networking	3.4	1.1	.36**	.10	.18*	-.02	.03	.17*
10. Learn Land Laws	3.5	1.1	.10	-.05	.16*	.20**	.06	.35**
11. Informed Contacting	3.6	1.1	-.08	.14*	.12	-.10	.14*	-.25**
<i>Actual Performance:</i>								
12. Income†	11.1	1.0	.15*	-.06	.26***	-.01	-.09	-.02

N=209 individual-level observations. †p<.1, *p<.05, †p<.01.

†=Income was computed to a natural logarithm in the regression analysis to induce normality (originally M= \$111,855.60, SD= \$87,313.85).

Note: AtJT = Attitude towards Job Task, EtJT(N-P) = Effort towards Job Task (Non-Performance), EtJT = Effort towards Job Task, COG = Commitment to Organization Goals, GSA = Goal Setting Autonomy

Variables	7	8	9	10	11	12
1. Firm						
2. Education						
3. Experience						
4. COG						
5. GSA						
6. AtJT						
7. EtJT(N-P)	--					
<i>EtJT Performance:</i>						
8. Sales Mode	.46**	--				
9. Community Networking	.34**	.08	--			
10. Learn Land Laws	.38**	.22**	.25**	--		
11. Informed Contacting	-.14*	-.08	-.08	-.08	--	
<i>Actual Performance:</i>						
12. Income‡	.05	.13†	.10	.13†	.13†	--

N=209 individual-level observations. †p<.1, *p<.05, †p<.01.

†=Income was computed to a natural logarithm in the regression analysis to induce normality (originally M= \$111,855.60, SD= \$87,313.85).

Note: AtJT = Attitude towards Job Task, EtJT(N-P) = Effort towards Job Task (Non-Performance), EtJT = Effort towards Job Task, COG = Commitment to Organization Goals, GSA = Goal Setting Autonomy

the optimal model to use based on the data. Model 1 was a direct-effects-only model, where COG and GSA predict Attitude towards Job Task [AtJT], Effort towards Job Task (Non-Performance) [EtJT(N-P)] and the salespersons core job tasks: Sales Mode, Learn Land Laws, Community Networking, Informed Contacting, and Income. While model 2 is a mediation model, where COG and GSA predict AtJT, and then all three predict EtJT(N-P), and all four predict salespersons core Job Tasks (Sales Mode, Learn Land Laws, Community Networking, and Informed Contacting), and then everything predicts Income. Overall, model 1 was a good fit to the data: $\chi^2(df) = 117.8(67)$, CFI=0.94, RMSEA=0.06, SRMR=0.05. However, model 2 was a better fit to the data: $\chi^2(df) = 107.8(66)$, CFI=0.95, RMSEA=0.06, SRMR=0.05. Comparing models (Hair et al., 2010) showed that model two (partial mediation model) is superior to the other model ($\chi^2\Delta(\Delta df) = 10.0(1)$, $p = 0.002$). Examining the bootstrapped confidence intervals show that none cross zero, indicating confidence in the mediation effects found (Preacher & Hayes, 2008).

Moderation Model

Having established that the partial mediation model is the best fit, we then analysed the potential moderating effect of COG and GSA on Attitude towards Job Task and Effort towards Job Task. The moderated SEM model includes additional constructs representing the interaction of COG and GSA x (1) Attitude towards Job Task, (2) Effort towards Job Task (Non-Performance) and (3) Effort towards Core Job Task (four individual tasks). Overall, the moderated model still resulted in an excellent fit to the data where it met minimum requirements: $\chi^2(df)=255.8$ (170), CFI=0.95, RMSEA=0.05 and SRMR=0.05. Aligned with the recommendations of Grace and Bollen (2005), unstandardized regression coefficients are presented in Fig. 1.

Figure 1 details the results of the models for the dependent variable income, testing the direct effects of salesperson attitude on effort (Hypothesis 1a) and salesperson effort on income (Hypothesis 1b) in Model 2, direct effects of GSA and COG on salesperson attitude towards core job task (Hypotheses 2a and 3a) and salesperson effort towards core job tasks (Hypotheses 2b and 3b) in Model 1, as well as the interaction effects of COG and GSA on the relationships between salesperson attitude and effort towards core job tasks (Hypotheses 4a and 4b) and salesperson effort on core job tasks and financial performance (Hypotheses 5a and 5b), respectively.

We report the direct effects from Model 1 first. GSA is significantly related to the specific task of Informed Contacting only (path coefficient=0.14, $p<0.05$), providing no support for Hypothesis 2a but some towards 2b. COG is significantly related to Attitude towards Core Job Task (path coefficient=0.32, $p<0.001$), Effort towards Job Task (non-performance) (path coefficient=0.22, $p<0.01$), as well as the specific tasks of Sales Mode (path coefficient=0.19, $p<0.01$) and Community Networking

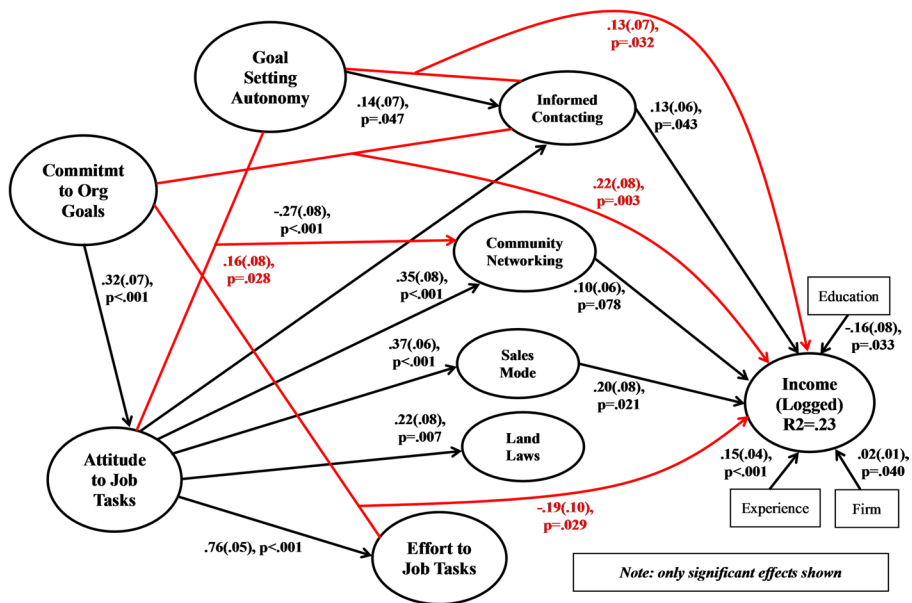


Fig. 1 Final Study Model (including Moderation)

(path coefficient=0.23, $p<0.01$). This provides strong support for Hypotheses 3a and 3b. Model 3 (the best fitting model to the data) shows that the influence of attitude and effort towards core job tasks mediates most of these direct effects, with all the significant effects of COG to core job tasks fully mediated, and the GSA influence on Informed Contacting (path coefficient=0.13, $p<0.05$). This supports our model of effects where GSA and COG influence Attitude towards Job Task, which in turn influence Effort towards Job Task, for both non-performance and performance-related core tasks. Overall, it appears that COG is a stronger direct predictor of task attitude and effort than GSA.

The next set of analyses related to the salesperson attitude and subsequent effort on core job tasks (Hypothesis 1a) and subsequently effort to performance (Hypothesis 1b). Figure 1 shows the effects of Attitude towards Job Task representing Hypotheses 1a and this is fully supported, with salesperson attitudes significantly related to all salesperson core tasks. Attitude towards Salesperson Task is significantly linked to Sales Mode (path coefficient=0.37, $p<0.001$), Learn Land Laws (path coefficient=0.22, $p<0.01$), Community Networking (path coefficient=0.35, $p<0.001$), Informed Contacting (path coefficient=-0.27, $p<0.001$), and Effort towards Salesperson Task (Non-Performance) (path coefficient=0.76, $p<0.001$). Importantly, this finding shows that when Attitude towards Salesperson Task is significant, then all the direct effects of COG to salesperson tasks become fully mediated. This suggests that COG might best be understood as enhancing attitudes towards salesperson tasks which in turn enhance effort towards tasks. Hypothesis 1b represents Effort towards Core Job Task towards performance (income) and Model 3 shows that towards Income, the following Core Job Tasks (effort) were significantly related: Sales Mode (path coefficient=0.19, $p<0.05$), Informed Contacting (path coefficient=0.13, $p<0.05$) and Community Networking (path coefficient=0.10, $p<0.1$). This provides strong support for Hypothesis 1b, although Learn Land Laws was not significantly related and neither was Effort towards Salesperson Task (non-performance), although the latter was expected not to be significantly linked.

Interaction Effects and Plots

Our final set of Hypotheses explored potential moderating effects of COG and GSA on the relationships between Attitudes towards Core Job Tasks and Effort towards Core Job Tasks (Hypotheses 4a and 4b) and on Effort towards Core Job Task towards performance (Hypotheses 5a and 5b). A significant two-way interaction effect was found between GSA and Attitudes towards Core Job Task towards Community Networking (path coefficients=0.16, $p<0.05$), providing some support for Hypothesis 4b but none for Hypothesis 4a, as COG did not significantly interact towards any Task effort. There was good support for interaction effects towards Income, with both Hypotheses 5a and 5b supported. COG interacted with Effort towards Salesperson Task (Non-Performance) (path coefficients= -0.19, $p<0.05$), while Informed Contacting interacted with both COG (path coefficients=0.22, $p<0.01$) and GSA (path coefficients=0.13, $p<0.05$).

Plots of the significant two-way interactions are shown in Figs. 2, 3, 4, 5.

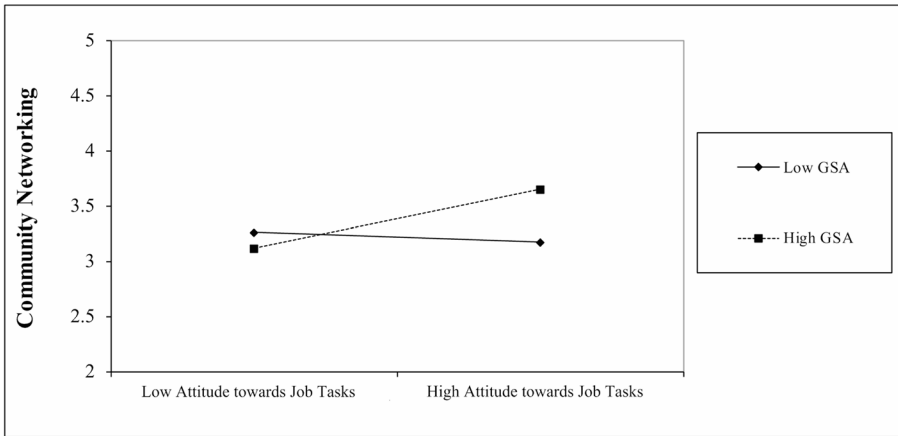


Fig. 2 Interaction of Attitude towards Job Tasks and GSA with Community Networking as Dependent Variable

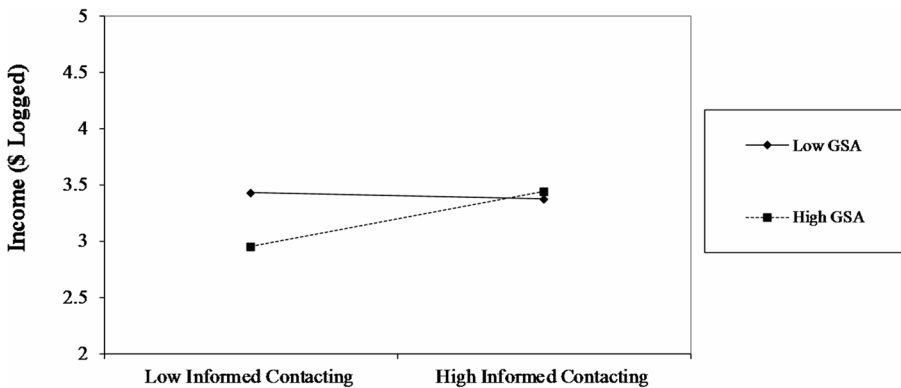


Fig. 3 Interaction of Informed Contacting and GSA with Income as Dependent Variable

Figure 2 shows that at low levels of Attitude towards Job Tasks, differences in GSA result in little differences in how a salesperson engages in Community Networking. However, at high levels of Attitude towards Job Tasks, high levels of GSA are associated with significantly higher Community Networking while participants with low GSA report flat levels of engagement with Community Networking. This supports the argument that GSA will enhance the attitudes of salespersons leading to greater engagement for a specific performance-relevant core task.

Figure 3 shows that at low levels of GSA, participants with low levels of Informed Contacting have an income significantly higher than those with high levels of GSA. This means that high levels of GSA offered to workers can have a detrimental effect on performance, and thereby, be counterproductive for a specific performance-relevant core task. At high levels of Informed Contacting these effects are neutralized, with similar income levels irrespective of GSA. Figure 4, again on Informed Contacting and Income but this time with COG, shows at low levels of COG that the highest

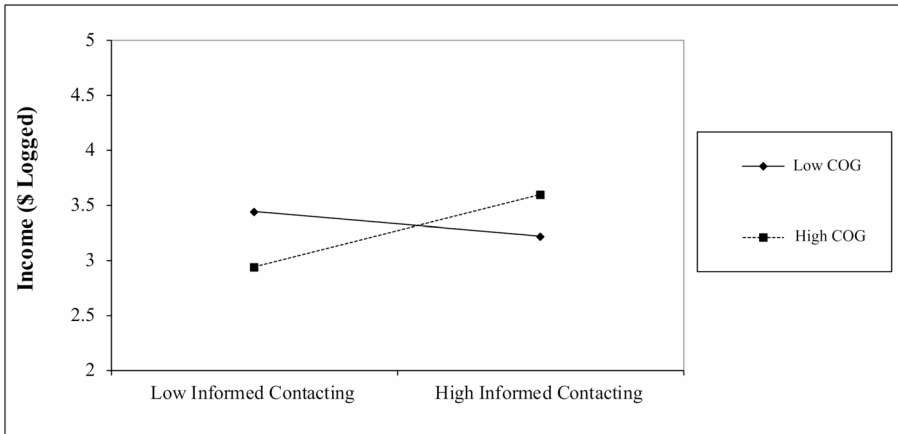


Fig. 4 Interaction of Informed Contacting and COG with Income as Dependent Variable

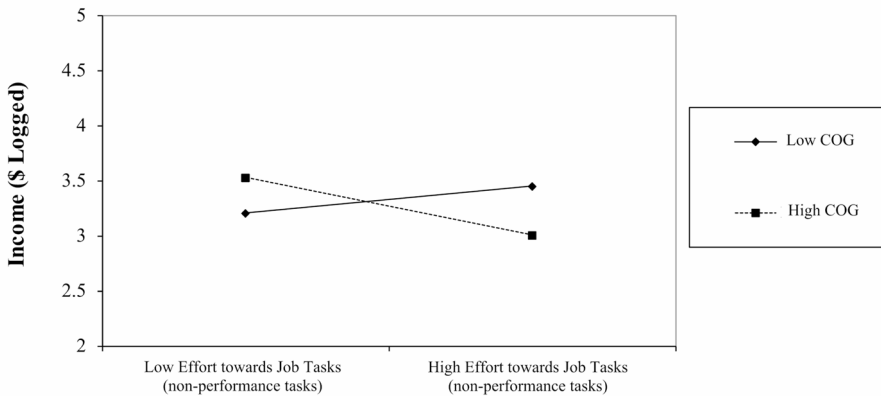


Fig. 5 Interaction of Effort towards Salesperson Task and COG with Income as Dependent Variable

income is for those engaging in low Informed Contacting. However, at high COG these effects are reversed, where participants who engaged in high Informed Contacting have the highest levels of Income. This partially supports the hypothesis that COG will enhance the benefit of effort on Sales Tasks towards Income, but again only for a specific performance-relevant core task – and not generally for all job tasks. In fact, this result also shows that generally high COG is not necessarily beneficial if certain core tasks are conducted in a particular way.

Figure 3 shows low levels of Effort towards Job Tasks (Non-Performance) leads to the highest Income at high COG, as hypothesized. This is because these types of Tasks are less likely to enhance Income. However, those who engage in high levels of Effort towards Job Task (Non-Performance) have a significantly lower Income despite the high levels of COG, which again shows limits that which high COGs can

be connected to. Overall, the four interactions generally support our hypothesized effects, but highlight nuances that are important and unexpected.

All three control variables were significantly related to Income: Firm (path coefficient=0.02, $p<0.05$), Experience (path coefficient=0.15, $p<0.001$), and Education (path coefficients=-0.16, $p<0.05$). Overall, the model accounts for a modest amount of variance towards income (23%).

Overall, these findings show how, GSA and COG differently influence the attitude-effort-performance relationship, on core job tasks. Figures 3 and 4 show COG more positively influences the use of the task informed contacting, than does GSA when the individual exerts high levels of effort on this task. Of interest here, is that the managers choice to grant low GSA, positively influences those workers with low informed contacting. Observations in the field suggest this result is driven by less experienced workers who appreciate less GSA, and who also have potentially less established clients contacts. Furthermore, when workers have high COG, they are better off putting in low effort on a non-performance task (see Fig. 3), as reflected in their performance. This suggests, and is again supported by observations in the field, that more experienced workers, who have high COG and who are effectively investing less effort in non-performance job tasks, have over the years learned what to, and what not, to focus on, while the managers have learned to adapt GSA to match the salesperson's attitude/effort profile.

Discussion

This study set out to examine how GSA and COG influence attitude towards individual job tasks, and how the effort put into these job tasks, is then associated with financial performance. We conducted our study in a 'real-world' multi-task setting in the real estate industry, where organizations heavily rely on a full GSA spectrum from goal setting being determined top-down, to salespersons independently setting own goals. We found both GSA and COG encourage worker behaviour towards performance. A central finding of this study explains how GSA, as a form of extrinsic motivation can be used to positively influence goal directed behaviour at the micro-level of individual job tasks. The analysis shows how GSA, as a decentralization measure, influences attitude, effort, and task choice that when combined can have unexpected performance implications.

We uncover how for the very same job task, GSA and COG can have the same, no, or even differing effects, suggesting both GSA and COG entail boundary conditions and ramifications that have distinct performance implications. GSA was found to influence the effort-performance relationship more effectively than the attitude-effort relationship. For organizations, this suggests the need for profound knowledge concerning workers' ability to effectively select and prioritize individual job tasks. The implications of the discretionary use of GSA, and the long-term influence of COG, impose significant knowledge management requirements for middle managers. For those organizations favouring more decentralized activity, the goal setting process involves important understanding of the task environment, and how workers achieve goal directed performance.

This study contributes to several streams of literature. Our findings extend understanding on the goal process, including the benefits and challenges for organizational design and the role of knowledge management. More specifically, we address two considerations raised by Puranam (2014) and Reitzig (2022b) in implementing a flatter organization design structure. First, how can the task of goal setting be divided, and what are the implications of participatory goal setting on the use of job tasks in a multi-task context. Second, how can knowledge concerning job tasks and goal setting be leveraged by organizations to influence worker behaviour towards improved performance. By investigating the influence of GSA and COG, usually associated with higher and lower levels of autonomous motivation, respectively, together with the impact of individual job tasks on performance, we offer new insight into the goal internalization process (e.g. Koestner et al., 2015) In doing so, we highlight for those organizations attempting to decentralize the importance of understanding and engaging in a knowledge management process (Shariq et al., 2019).

Our findings provide a foundation to explain how knowledge can be strategically managed during the goal process for those organizations operating in a decentralized setting (Carayannis, 2014; Peng et al., 2018). More specifically, our findings point to the need for a 'goal process capability' that considers how managers engage in (1) determining goal process parameters; (2) assessing micro-level motivation values; and (3) attempting to develop a balanced manager-worker psychological contract.

Determining goal process parameters requires managers to engage at the organization-manager level, to develop knowledge management processes surrounding the organization's goal and performance requirements of its workforce (Muzam, 2023; Zaim et al., 2019), including the potential for participatory goal setting; the nature of the organization culture, and those specific individual job tasks required to effectively operate, especially in highly regulated industries. While assessing micro-level motivation values (Bandhu et al., 2024) requires managers to focus on the manager-worker level, to understand the value of individual job tasks and how worker preferences to engage in these individual tasks are differently influenced by GSA and COG towards performance. Then attempting to develop a balanced manager-worker psychological contract requires managers to regularly engage in dialogues with workers to share information on the value of individual job tasks and to establish and continuously refine their own and the organization's understanding, on workers' preferences for how individual job tasks are executed. Managers also need to develop and refine their understanding of the heterogenous nature of GSA and COG in motivating their individual workers. These require a positive functioning manager-worker relationship, where managers strive for in-depth understanding of the knowledge and preference of individual workers and their willingness to change (Felin & Hesterly, 2007).

It should also be noted that establishing and adapting manager-worker psychological contracts in the goal process requires managers to understand that the resources expended in these efforts will ultimately reduce their span of control and may thereby limit the organization's ability to establish an even flatter organization structure. Hence, there is a trade-off between increasing autonomous goal setting and the associated organizational cost, namely the managerial ability to cope with the evolving organizational knowledge requirements.

Limitations and Future Research

We acknowledge our study comes with limitations that influence the generalizability of our findings. First, our analysis is limited to managers and salespersons in 18 real estate firms across New Zealand. Researchers may extend the use of our SEM analysis to other geographic regions and industry types, such as car sales as well as those industries that are less regulated or to industries that have more complex tasks, with higher entry and exit barriers. Future studies could also examine industries with goal spans that are shorter, or that exceed, one year. Second, our study focuses on the mid-level manager-worker relationship in each firm, hence future work could investigate whether this result holds for other hierarchical constellations. Third, our key constructs GSA and COG are, by design, single item measures that are tailored to our setting and research design with 30 individual job tasks. Future studies could investigate GSA and COG with multiple-item measures and more elaborate measurement techniques; it could also categorize job tasks differently. Furthermore, researchers could investigate the autonomy-motivation dynamics between top and senior managers and mid-level managers and workers, which could extend the meso-micro level of analysis to include the macro level and hence the span of the goal process capability that we have begun to develop. This knowledge would be particularly pertinent in activities such as GSA that we found to be insufficient alone to positively influence performance. However, this understanding, we argue is an important antecedent for managers in creating ways to motivate workers, as they decide how to select between providing autonomy versus control in the goal process.

Practical Implications

This study sheds light on the value of participatory goal setting and its importance for single job tasks in a multi-task setting. Our findings suggest that managers relying on semi-autonomous or participatory goal setting will benefit from identifying which job tasks have direct performance implications (core to the job) and which have less relevance. The results clearly show that some job tasks are sensitive to GSA – knowing these tasks, as well as the specific influence that GSA has on the task, are important knowledge management process requirements (Vinas-Bardolet et al., 2020) for organizations and managers trying to decentralize. In other words, the implementation of less-conventional organisation design approaches (e.g. Peng et al., 2018; Robertson, 2015; Turco, 2016) will require changes to how knowledge is managed, particularly how it is shared through, for example, leadership training, HR recruitment strategies, worker training and daily practice to promote an organization's approach to goal setting that acknowledges the particularities of this method.

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Declarations

Competing interest The authors have no financial or non-financial competing interests that are directly or indirectly related to this work. We have firm data that is confidential, where we have been asked by participating firms to not share the data.

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