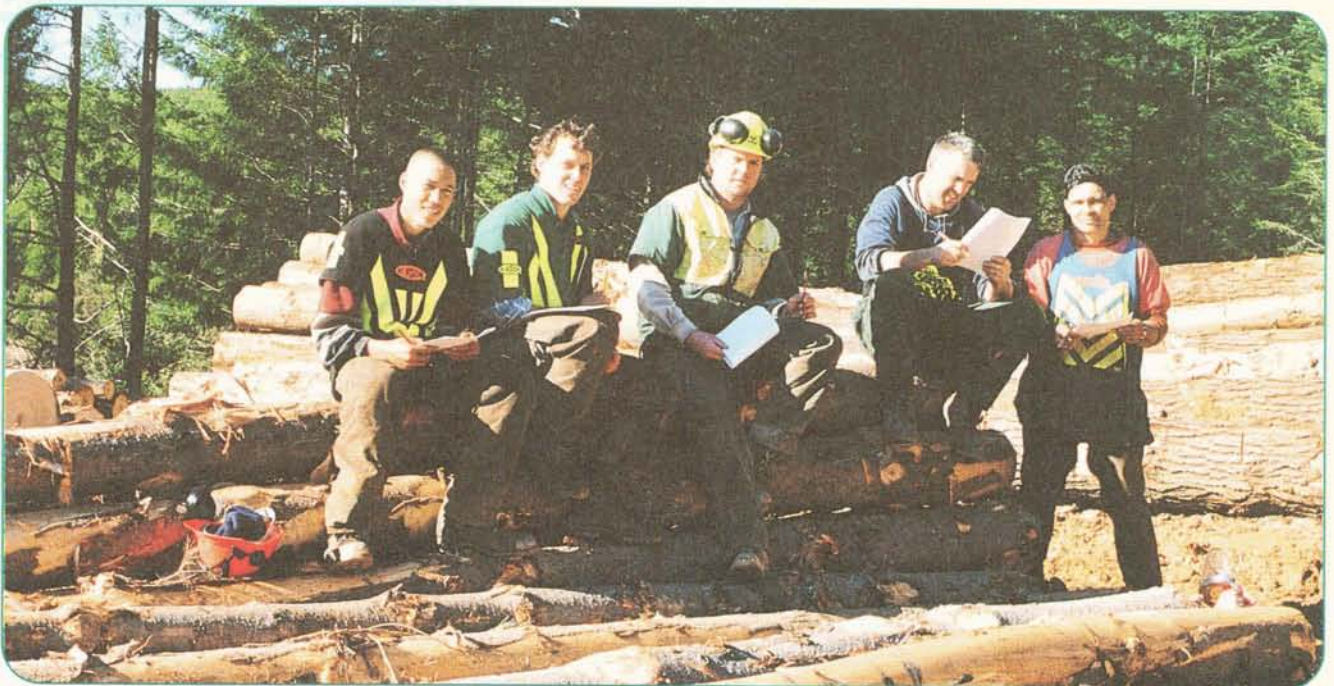


Role Conflict and Ambiguity in the Logging Industry

A Pilot Study

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Summary

In today's financially tough times the need to maximise the production/utilisation of all aspects of the operation is increasingly important. This can lead to an increase in the demands being placed upon crew members. This situation can result in the development of the potentially damaging impacts of role conflict and role ambiguity. The creation of role conflict and role ambiguity in crews has the potential to increase job tension, accidents and turnover, while lowering job performance, job satisfaction, and organisational commitment. These factors reduce the crew's ability to operate in a safe and profitable way. This survey found that the largest proportion of the workers (46%) perceived role conflicts to exist. Only 13% thought that role ambiguity existed.

Key Findings

- The majority of workers believed that to be productive they must put their own safety at risk
- Almost half the workers (41%) thought that environmental safety came at the expense of worker safety (36% disagreed)

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- Over half the workers (52%) agreed that environmental safety came at the expense of productivity (20% disagreed)
- The presence of role conflicts was found to correlate highly with having had a lost time injury in the last five years and job dissatisfaction
- Job dissatisfaction was correlated highly with intention to turnover
- Having more than one boss telling crew members what to do contributed significantly to the development of industry-specific role conflict

Recommendations

To decrease the negative impact of role conflict and role ambiguity, these solutions need to be incorporated into your crew management:

- have only one boss to ensure clear communication coming from only one direction
- provide crew members with performance-related feedback
- increase the job satisfaction of your workers

Definitions

Role conflict – "a perception of incompatible expectations"

For example "fell a daily target of 70 trees, but do it safely". In some conditions it may not be possible to fell 70 trees a day safely.

Role ambiguity – the "lack of clarity and predicability of the outcomes of one's behaviour"

For example "when to call for machine assistance when felling difficult trees?"

Method

In September 1997, a self-administered questionnaire was filled out by six Otago contractors and their crews, giving a total of forty seven respondents. Role conflict and role ambiguity were measured using a general role conflict and ambiguity scale that has been used in many other industries (Rizzo et al., 1970). In addition, a set of role conflict questions, specific to the logging industry (industry-specific measures), were developed and used. Another set of questions was used to measure three different types of role ambiguity

Results and Discussion

Role Conflict and Role Ambiguity

In terms of general role conflict, more workers perceived role conflicts did exist (46%) than those who thought role conflict did not exist (40%). In terms of role ambiguity, only 13% agreed, while the vast majority (76%) were in the disagreed range. Therefore, it appears that role conflict is more prevalent in the logging industry, than role ambiguity.

Industry-Specific Role Conflicts

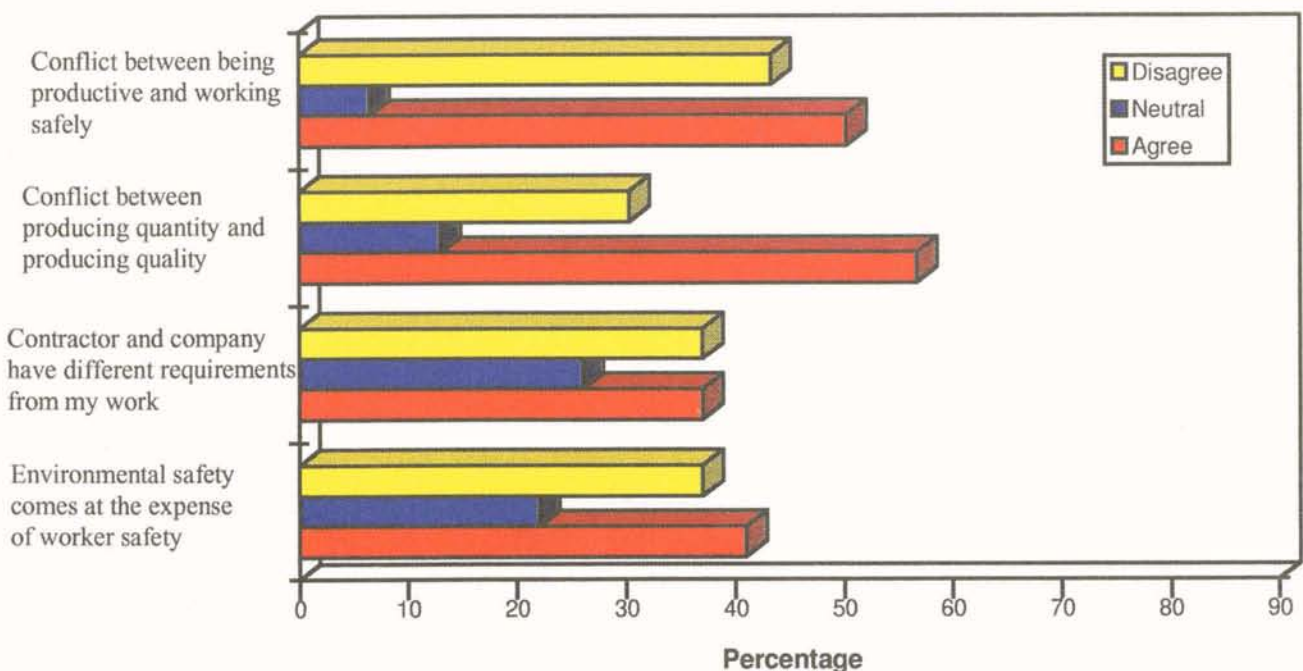
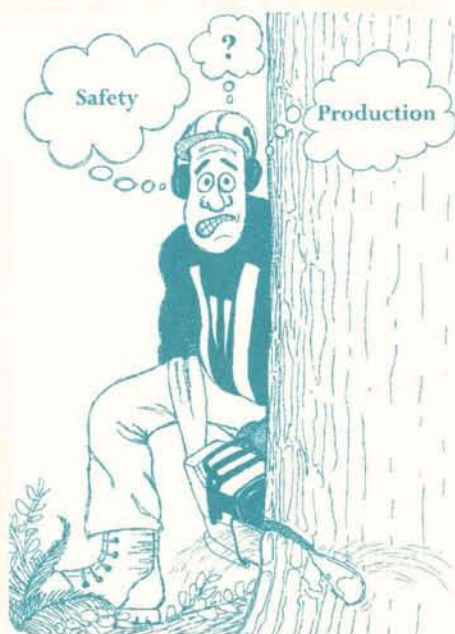


Figure 1 – Industry-specific role conflicts



Figures 1, 2 and 3 contain the distribution of responses to the industry-specific sources of role conflicts. When asked whether there was a conflict between being productive and working safely, 50% agreed, with 43% disagreeing. Of the 50% that agreed, the single largest percentage (22%) strongly agreed that there was a conflict between being productive and working safely.

The majority of workers believed that to be productive they had to put their own safety at risk

The majority of the respondents (57%) thought that there was a conflict between producing quality and producing quantity, while only 30% thought the two did not conflict.

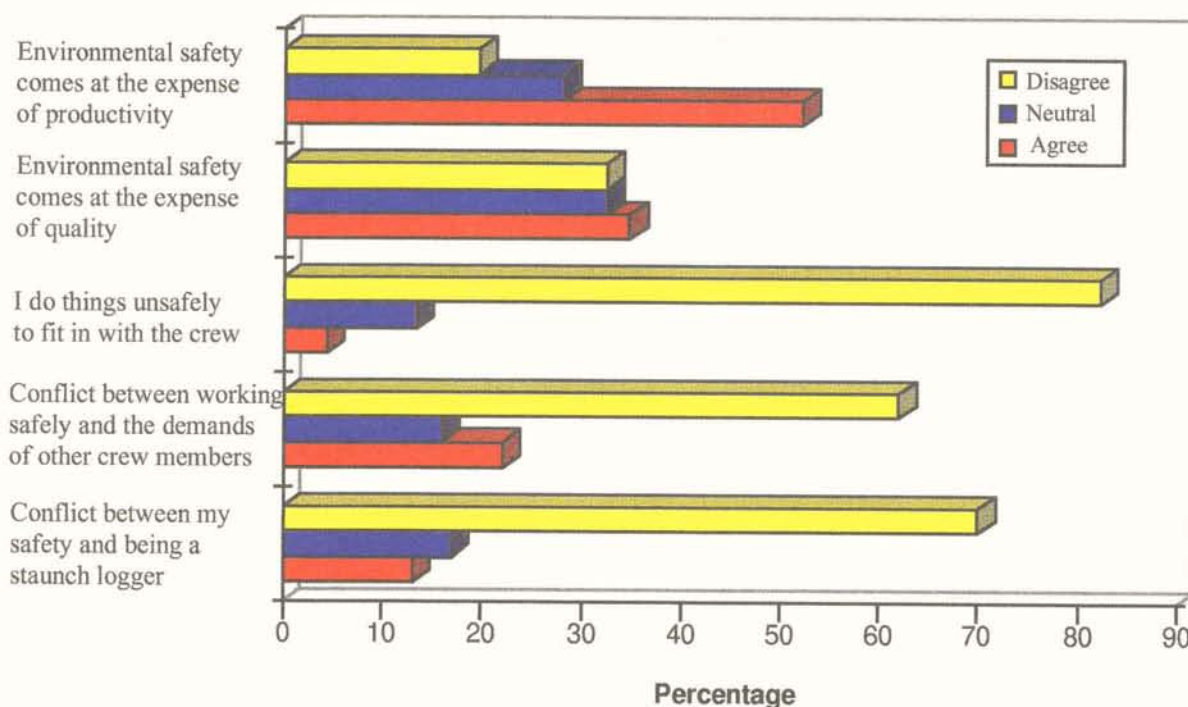


Figure 2 - Industry-specific role conflicts

Over half the respondents (52%) agreed that environmental safety comes at the expense of productivity, with 20% disagreeing. The vast majority (82%) of workers disagreed that they did things unsafely to fit into the crew, while 4% agreed. When asked if there was a conflict between working safely and the demands of others in the crew, the majority (62%) disagreed, while a concerning 22% agreed. The majority of workers (70%) disagreed with the statement that there was a conflict between safety and being a staunch logger, while 13% agreed.

For Figure 3, only the contractors were asked to respond. There was no consistent pattern for these questions, except for the question on whether there was a conflict between reducing logging costs and value recovery. The majority of contractors (60%) agreed with this statement (20% disagreed).

The majority of contractors believed there was a conflict between reducing logging costs and increasing value recovery

The biggest role conflicts appeared to be:

- productivity vs safety
- producing quantity vs producing quality
- environmental safety vs worker safety
- environmental safety vs productivity
- environmental safety vs quality
- reducing logging costs vs maximising value recovery.

Types of Role Ambiguity

Figure 4 shows the distribution of the three types of role ambiguity. **Performance criteria ambiguity** means that the employee is uncertain about the standards that are used to determine whether their job is performed satisfactorily. **Work method ambiguity** means that the employee is uncertain about the methods or procedures they should use to accomplish their work. **Scheduling ambiguity** means that the employee has uncertainty about the scheduling or sequencing of work activities. Figure 4 shows that only (1%) thought that there was scheduling ambiguity, 3% thought there was work method ambiguity and 11% was performance criteria ambiguity.

Job Satisfaction

Figure 5 shows the average level of satisfaction over the six areas of job satisfaction. This shows that most contractors and workers were reasonably satisfied with all aspects of their job. The highest level of satisfaction was reported for the work, followed by their co-workers. The lowest level of satisfaction was with their opportunities for promotion, followed by satisfaction with the supervision from both the contractor and forest company.

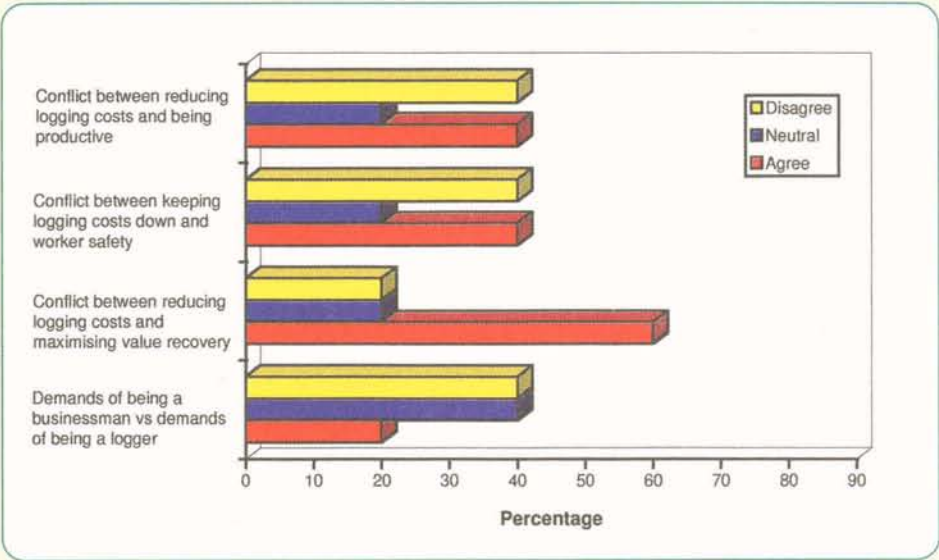


Figure 3 - Industry-specific role conflicts (contractors only)

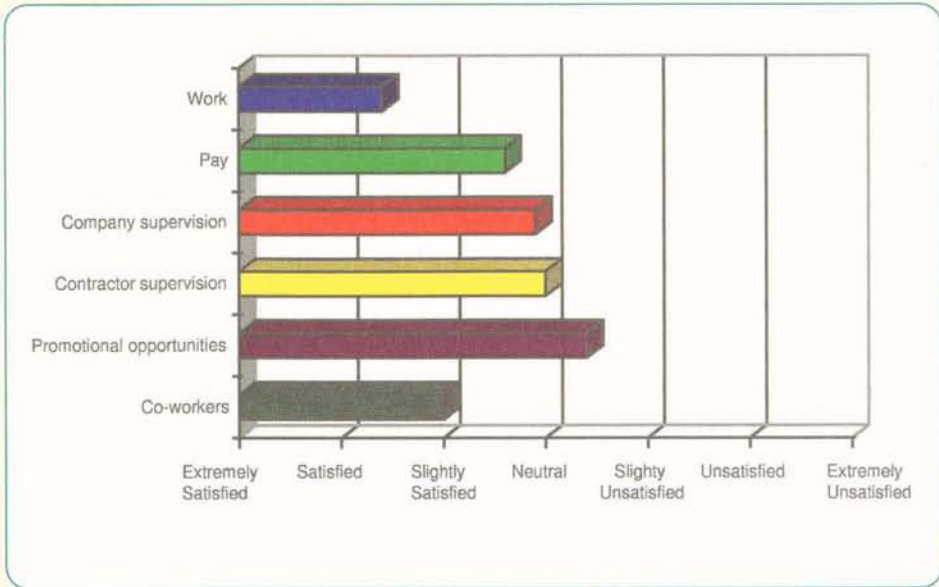
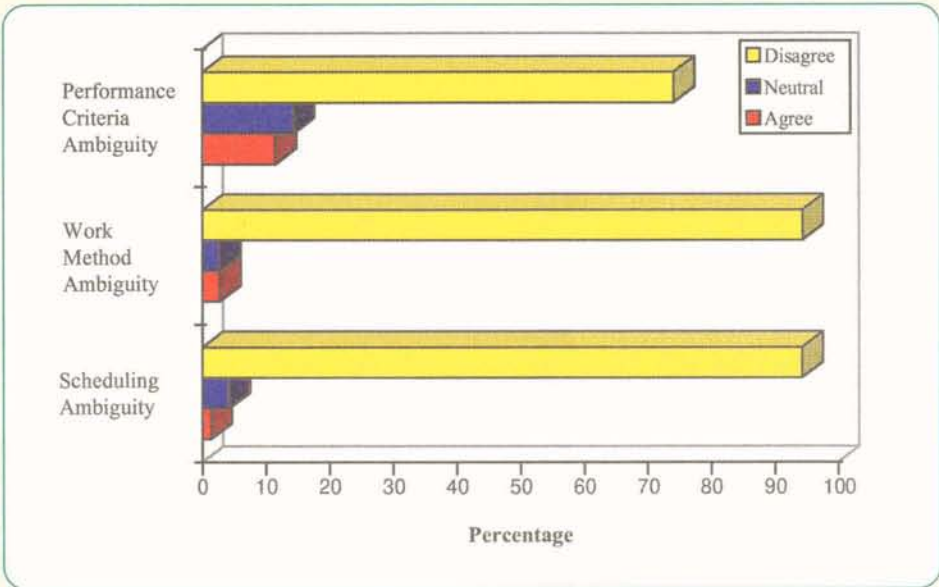


Figure 5 - Level of dissatisfaction

Feedback

The majority of respondents (53%) thought that the contractor did not give them feedback on how well they were performing their job, while 31% thought that the contractor did give them feedback. A large percentage of contractors (45%) stated that the forest company did not provide them with feedback about their performance.

A large proportion of workers and contractors thought that they did not get enough performance related feedback from the contractors and forest company, respectively

Therefore, it seems that performance-related communication needs to be improved. Performance-related feedback is very important, otherwise how can the forest company and the contractor expect the contractors and workers (respectively) to improve their performance and be working towards the same goals?

When asked whether they responded to more than one boss, a significant proportion (36%) said they did (55% stated they did not). Thirty three percent of contractors stated that they responded to more than one boss, while 67% said that they did not.

When asked whether they had a co-worker who could be used as a source of job-related information, most (68%) stated that they did, 10% were uncertain and 22% said they did not. The contractors were spread over the whole range, although over half (67%) stated they did have co-workers they could use for information.

Correlations Between Variables

A correlation means that the two variables are related in some way. It does not necessarily mean that one causes the other, although this could be the case. A common example is the colour of eyes and hair. People with dark hair normally have brown eyes. Therefore, there is a correlation between eye colour and hair colour.

General role conflict correlated significantly with whether:

- *the worker had more than one boss telling them what to do*
- *the person received performance feedback from the contractor*
- *there was another worker that did the same job as them and could be used as a source of job-related information*

The above correlations indicate that having more than one boss and not receiving performance feedback may contribute to the development of role conflict. The presence of another person doing the same job (who can be used as a source of job-related information)

may reduce the development of role conflict.

The industry-specific role conflicts were combined and tested for correlations with other variables.

The industry-specific role conflict correlated significantly with:

- *general satisfaction*
- *whether there was another worker doing the same job as them*
- *whether they had experienced a lost time accident in the last five years*
- *whether the worker had more than one boss telling them what to do*

The most significant result was the correlation between the industry-specific role conflicts and the presence of more than one boss telling the worker what to do. This suggests that having different bosses telling workers different things to do, and not having another worker to use as a source of information, could lead to the development of role conflict. This also suggests that experiencing these kinds of role conflict may impact upon job satisfaction.

The correlation between the industry-specific role conflicts and experiencing a lost time accident in the last five years could be due to two reasons. Firstly, there is the possibility that those who experience these role conflicts are more likely to have accidents. The second possibility is that those who have experienced a lost time injury are more likely to perceive role conflicts because of having been injured. There was also a statistically significant correlation between having more than one boss and having experienced a lost time injury while in the present crew.

Correlations with Each Industry-Specific Role Conflict

Having more than one boss telling the worker what to do correlated with all but two of the industry-specific role conflicts.

Having more than one boss telling the workers what to do contributed significantly to the development of industry-specific role conflict, including the conflict between being productive and working safely

There was a significant correlation between the presence of another person doing the same job that can be used as a source of job information, and the conflicts with both quality vs quantity and being productive vs working safely.

The presence of another person who does the same job, and can be used as a source of job-related information, decreases the conflicts between productivity vs safety and quality vs quantity

There was also a significant correlation between general satisfaction and the conflict between environmental safety and quality.

There was a significant correlation between those who perceived a conflict between productivity and safety and having had a lost time accident in the last five years.

This may mean that workers who perceive this conflict are more likely to have lost time accidents or it might be that workers develop this perception after having experienced a lost time injury.



"I find this work truly fulfilling in many ways - there's the exercise, the smell of pine trees and most importantly the chance to make lots of noise!"

It was also interesting to note that none of the industry-specific role conflicts were significantly correlated with intention to turnover or receiving feedback about the worker's performance. It would be expected that workers who experience these role conflicts would report a higher intention to turnover and would also report less feedback from the contractor.

Performance criteria ambiguity correlated strongly with:

- *whether the worker received feedback about how well they were doing*
- *having more than one boss telling them what to do*

The correlation of performance criteria ambiguity and whether the workers received feedback was expected, as these two scales were essentially measuring the same thing. The correlation with having more than one boss would also be expected, as the presence of a second boss may install some doubt about how or who would evaluate their performance.

Correlations with Job Satisfaction

General role conflict was significantly correlated with satisfaction with work and satisfaction with supervision from the contractor.

The presence of role conflicts impacts on both satisfaction with work and satisfaction with the contractor's supervision

Surprisingly, general role conflict was not correlated with the satisfaction with the supervision from the company. This indicates that it is the contractor that sets the psychology of the crew.

Performance criteria ambiguity correlated very strongly with satisfaction with:

- *work*
- *the contractor's supervision*

The above finding is not surprising, as it is the contractor who sets the performance criteria and if this criteria is unclear this should decrease satisfaction with work and with the contractor's supervision.

Work method ambiguity correlated very strongly with:

- *satisfaction with co-workers*
- *satisfaction with promotional opportunities*
- *satisfaction with work*

These findings seem fairly obvious, as if a worker is not sure about how to do their job, they may not enjoy the work and

may not be satisfied with their promotional opportunities.

Intention to turnover was correlated with all satisfaction variables, except satisfaction with co-workers. Particularly strong correlations were with:

- *satisfaction with promotional opportunities*
- *satisfaction with pay*

Therefore, it seems that dissatisfaction with these two variables, increases the likelihood that the worker will leave. However, dissatisfaction with co-workers will not cause them to leave.

Having more than one boss was correlated with:

- *satisfaction with work*
- *satisfaction with contractor supervision*

This indicates that having more than one boss telling the worker what to do reduces satisfaction with work and satisfaction with contractor supervision, which is to be expected.

Feedback was correlated with:

- *satisfaction with contractor supervision*
- *satisfaction with work*
- *satisfaction with co-workers*

The correlation between the feedback variable and satisfaction with contractor supervision is to be expected, as the contractor would be the primary source of feedback. A lack of feedback from the contractor would also decrease satisfaction with work, hence the significant correlation between feedback and satisfaction with work. The correlation of feedback and satisfaction with co-workers could be attributed to workers using their co-workers as a source of information, and if they do not provide feedback the worker becomes dissatisfied, which would also account for the correlation with co-worker satisfaction.

Conclusions

There was a significant proportion of the surveyed workforce that perceived role conflicts and role ambiguities in their work.

The global measures indicated that the largest percentage (46%) believed there was role conflict. The industry-specific measures of role conflict found that there were:

- conflicts between productivity and safety
- producing quality and producing quantity
- environmental safety and the safety of workers

- environmental safety and productivity
- environmental safety and quality
- reducing logging costs and maximising value recovery.

There was a significant correlation between role conflict and having had a lost time accident in the last five years. However, the presence of role conflicts and role ambiguity did not directly affect intention to turnover.

General job satisfaction was correlated with industry-specific role conflicts. There were strong correlations between almost all aspects of job satisfaction (except satisfaction with co-workers), and intention to turnover. Particularly strong correlations were found between:

- intention to turnover
- satisfaction with promotional opportunities
- satisfaction with pay.

Therefore, role conflicts may increase the intention to turnover indirectly through reducing job satisfaction.

One of the factors that correlated most strongly with role conflict and role ambiguity was having more than one boss.

In the logging industry, it appeared that role conflict was a larger problem than role ambiguity.

Acknowledgements

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Reference

Rizzo, J.R., House, R.J. and Lirtzman, S.I. (1970). Role conflict and ambiguity in complex organisations. *Administrative Science Quarterly*, 15, 150-163.

