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Introduction to Presage Segmentation

Psychological Workgroup Profiles: "Refers to the unique psychological and personal characteristics of an individual or group of individuals that differentiate them from other individuals that are defined by differing psychological and personal characteristics."

It is Presage's experience that clients across diverse sectors, that have used psychological workgroup profiles have significantly strengthened their health and safety systems, enriched their risk prevention strategies, and become better at managing and improving safety in their workplaces.

Psychological workgroup profiles equip leaders with the means to knowledgeably and effectively:

- Identify distinct groups and segments of its workforce.
- Assign workers to respective groups with deliberate forethought.
- Design highly targeted and customized mitigation strategies for different safety competency types.
- Put in place manageable mitigation strategies that are easy to explain to safety stakeholders.

Workforce Segmentation: "A statistical procedure that groups or clusters employees together based upon their similar pattern of scores on specific tests or survey questions. This similarity defines the unique psychological make-up of this group that puts them at risk for accidents and incidents. Each segmentation defines the distinct and separate psychological characteristics that put certain employee groups at risk."

Each workforce presents a range of psychological risk and safety profiles within their particular workplace. [1]The precise groupings, or "segments", of these profiles naturally differ from one company and one industry to another. The identifying markers among a group's members will include strong similarities in their safety and risk tendencies and measurable differences from members of other groups.

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1   Bauer, T. & Erdogan, B. (2011). Organizational Behavior. V. 1.

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Statistical clustering algorithms, a core output of Presage's patented solution, locate these workforce segments and accurately identify areas in the risk-safety competency space with large densities of data points (i.e., workers). Presage looks for commonalities, then groups them together.

Knowing which segments comprise a company's work environment allows safety personnel to see the distribution of groups across its sites. This knowledge brings to light the ways in which different segments impact safety both individually and when they work together. By using Presage's risk-safety workgroup profile types, managers can assess actual risk increases for their work crews when, for example, an "accident enabler" works alongside a "relationship avoider".

Key Benefits of Presage Segmentation
An important question to ask when considering a segmentation project is: "What are the value propositions that segmentation will generate for my company?"

Among many strategic outcomes and tailored features the design offers, Presage Segmentation enables you to:

1. Develop targeted communication, remediation and training for each group
    to provide the most appropriate training for those who most need it;

2. Reduce safety-training costs significantly as compared to one-on-one
    training and communication;

3. Visualize predictable, actionable groups, which, with increasing familiarity,
    become very easy to identify and diagnose.

4. Take control with early identification of the "toxic" combinations of distinct
    segments within any working group.

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Presage Segmentation gives companies the ability to grasp more clearly and with unprecedented depth their existing and possible risk issues. Our Segmentation clients can therefore design and implement custom-built, targeted safety and mitigation strategies by:

- Identifying types of workers who require similar safety training
- Benchmarking work crew composition, and
- Obtaining in-depth knowledge about segments working together in teams.

Based on Presage Segmentation assignments, safety managers gain full insight into the safety and risk behaviors that result in particular employees showing up in specific segments. With this insight, managers are able to identify causal factors that can produce segment adaptations and other shifts across and between segments over time.

The valid, accurate and near real-time assignment of each worker to their proper segment is the foundation of Presage Segmentation. The use of segmentation and employee assignments is extensive and adaptable to diverse client needs. For example, based on existing assignments, predictive modeling can show the safety competency segment of new employees entering the workplace. This modeling could likewise augment hiring strategies, establishing a minimum threshold of risk-safety competency for new hires plus a safe mix of psychological profiles within different regions, work sites or work groups.

Presage: Innovative, Unique Solutions:
Companies focused on developing the most robust workplace strategies available for risk prevention and employee safety improvement ask us:

1. What mix of segment-based strategies should we put into place to strengthen our training development and promote better safety behaviors and awareness?
2. Which segments should we target for fast remediation?

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Overview

In the case study that follows, we describe a company's engagement with Presage Group, and show how Presage Segmentation made it possible for them to identify, understand, and respond appropriately to the segment arrays present in their work environment. Not only were they able to get highly effective answers to all of their questions, but the innovative segmentation outputs enabled this company to engage its workforce on a new foundation on which to have a novel and meaningful discussion regarding their personal safety and the safety of their co-workers. In short order not only did the customer see an increase in employee engagement around safety but they also saw employee competencies in critical safety awareness categories improve.

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Our Client

One of our corporate clients is a safety leader in the utilities and construction industry. Their safety leadership team was meeting regularly to discuss the organization's safety culture and how they could encourage best practices. The team resolved to enhance their current risk management practices by offering their employees a suite of mitigation strategies. With research, they learned about workforce psychological profiles, but had specific questions to answer before mitigations and personalized training modules could be designed and their objectives met:

- Could they efficiently determine which psychological profiles exist within their workforce and their distribution?
- Could they drill through the distribution to see differences across a range of demographic or geographic variables?
- Could they clearly map and understand distribution changes across time as a result of training interventions targeted to their segments intervals?

Our client ultimately chose to implement the Presage software solution because it satisfied their questions and allowed for the implementation of the training and mitigations they wanted.

The Presage methodology involves the continuous surveying of their employee base in order to assess an individual's expert competency across nine distinct safety awareness measures. The Presage Group analyzed the results through a calculated clustering of our patented algorithms, thereby assessing work competencies in nine areas of situational safety awareness. We discovered that the client had five of the nine prevailing psychological risk-safety profiles at play within their workforce. This type of analysis offers the client a quality of diagnostic precision and definition which enables Presage to design the most actionable solution for the company's mitigation strategies – which in this case meant providing differentiated awareness training to each of the groups it had targeted. This corrective action produced the greatest risk reduction in the shortest amount of time.

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Five Segment Types

Here is a synopsis of the five segment types that Presage uncovered, by name with details of the salient group characteristics:

1. Accident enablers
   - Score very low in all Presage awareness categories.
   - They don't have a well-grounded set of gut feeling for threats and are unable to adjust when risks present themselves.
   - Albeit this segment understands work procedures and limits they will often steamroller through the workday with little regard for the psychosocial safety resources available to them, thereby putting themselves and others at risk.

2. Naïve brother's keepers
   - Score high in terms of keeping each other safe.
   - These workers do not rely as much on experience as they should and do not understand safe operating limits as well as other workers.
   - Important to harness their motivation regarding team cohesiveness as a means to ensure they engage in conversation with co-workers when they are uncertain about understanding the procedures or safe operational limits of their equipment.

3. Skilled isolationists
   - Score similarly to the "Naïve brother's keeper" segment, however they score particularly low on keeping each other safe.
   - As competent company employees this segment limits their ability to share and/or communicate relevant and at times critical safety and compliance information because of their natural tendency to internalize their thoughts and experience.
   - Strengths: Tend to adjust well to threats and rely on their experience often.

4. Blind-spot workers
   - Score very low on relying on their experience, knowing the procedures, and company support for safety.
   - This segment is naturally vulnerable to the "I don't know what I don't know effect," which can often lead them into a false sense of security and comfort.
   - These workers tend to see and adjust to threats well, except in their areas of blindness.

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5. Confident complacents
   - Score well in all Presage awareness categories.
   - Slight dips in terms of relying on their experience and instrument and equipment knowledge.
   - These workers may be over confident in their safety skills and knowledge, which can lead to lapses on more menial tasks.
   - This segment was characterized by more years of experience, yet they represented approximately 35% of the demographic for employees who had an accident within the last 6 months.

Presage Group's dynamic reporting made it possible for the company's management team to engage in meaningful discussions about safety and group dynamics in a way never before possible. Custom mitigations and corrective actions are shaping safety training program content to such a degree that all employees are being educated on the presence of these psychological profiles and the unique threats they pose within the workforce and how best to manage them.
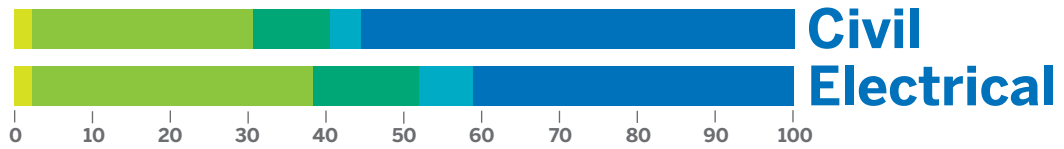
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1. Segment Breakdown Based on Function (%)

Segment distribution within various functional groups allowing focused mitigation strategies within the different areas of the workforce.

Civil

Electrical

0 10 20 30 40 50 60 70 80 90 100

2. Segment Breakdown Based on Experience (%)

Figure 2 shows how different segments migrate within the organization as the workforce evolves and becomes more mature over time.

1 - 5YRS

6 - 20YRS

21+YRS

0 10 20 30 40 50 60 70 80 90 100
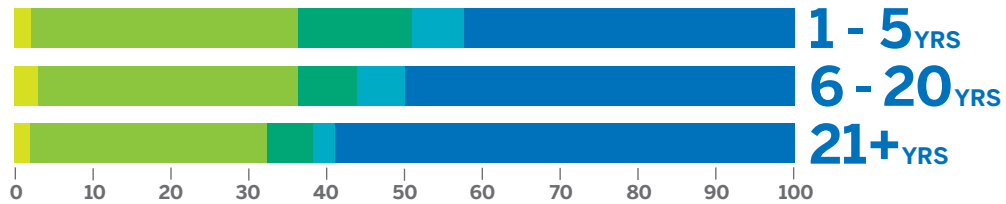
3. Employee's Self Reported Near Misses Indicative of Segment (%)

Figure 3 ties the segments to real incident data, allowing companies to visualize andunderstand how these groups affect their bottom line.

Never/None

7MOS **- >2**YRS

<6YRS

0 10 20 30 40 50 60 70 80 90 100
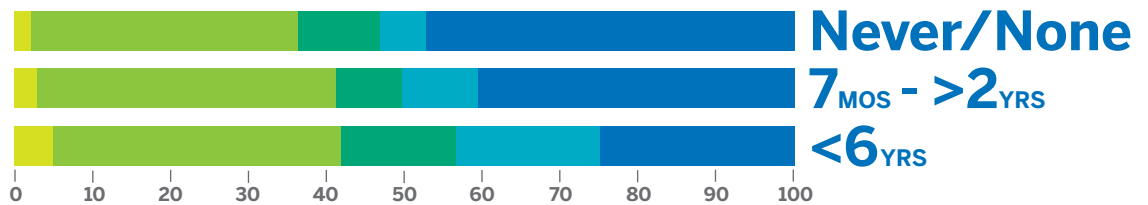
■ Accident enablers   ■ Naive brother's keeper   ■ Skilled isolationist   ■ Blind spot workers   ■ Confident complacents

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Potential next actions were discussed amongst the safety leadership team, including:

1. More focused survey offerings. For example, in a region found to have a high percentage of blind spot workers, surveys could be distributed to that region which places a strong focus on questions that would clarify why these employees don't rely on their experience and why they fail to understand the safety-risk procedures in place.

2. Training modules through the Presage software solution delivered to employees according to their specific segment requirements. Presage Group would begin with basic offerings to allow for the analysis of the effectiveness of the segment mitigation strategies both within each segment and in view of the segments larger external context. Through time, the offerings themselves or the mix delivered to certain segments can be more finely tuned and enhanced for greater effectiveness.

Conclusion

The effectiveness of any safety program or culture will rest largely on its ability to accurately identify, measure and control the factors that threaten personal, operational and customer safety.

Couple this requirement with the fact that 80-90% of all accidents/incidents result from human error, and it becomes obvious that the identification of personality types and traits which threaten safety and increase personal and operational risk must be a central pillar in the mitigation of threat and in the evolution of all robust safety programs.

The Presage software solution and its innovative capability to cluster personality profiles offers all industries driven by operational procedures and compliance requirements statistically valid means and effective mitigations to identify, measure, predict and control threats to human safety.

For more information, please contact:
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