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Employee Attachment Theory, Design and Measurement

Extended Research findings,
Validation and Reliability Study of
the Employee Attachment Inventory

Researchers and Authors

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ABSTRACT

This research paper describes how social attachment theory was extended and applied to the workplace to design a “New Employee” retention, discretionary effort and performance enhancement instrument, The Employee Attachment Inventory (EAI). The EAI, now a patented instrument, was designed to measure the strength of emotional bond between a new employee and the hiring organisation based on the behavioural impact of their immediate manager during the first 90 days of employment, and to provide an opportunity strengthening this bond between the 90th and 120th day of employment, thereby reducing the risk of unwanted attrition, while increasing discretionary effort and performance of the new employee. This article provides a detailed overview of the theory, design, pilot testing, commercial application and additional research findings of the EAI instrument.

The initial researcher in the study originally theorized that the principles of social attachment theory could be applied to the workplace relationship between a new employee, the immediate manager and the hiring organization. The EAI resulted from the theory, research, modelling and social attachment framework which was tested, improved and applied to businesses and organizations in Australia as a pilot test of the instrument for a worldwide market. Additional researchers joined the study to assist with organizing the extant data and validating the instrument. A further researcher joined the study to analyse the predictive qualities, the impact of core attachment perceptions, the impact of intervention on discretionary effort and the effect of certainty on Attachment.

The EAI is a data-collection, data-analysis and consultative reporting instrument. The report that is generated is a comprehensive guide for managers and allows for intervention and

improved engage with new employee, improved communication and mutually agreed actions with the intent of strengthening attachment bonds, improving employee retention, discretionary effort and contribution, thereby improving the human capital return on investment for the organisation.

This study confirms the Employee Attachment Inventory is a valid, reliable and effective instrument for measuring new employee attachment to the hiring organisation. When administered between the 90 and 120 days from hiring, the EAI has been proven to be effective for improving the strength of bond between managers, new employees and the organisation. The use of the EAI has been proven to improve the discretionary effort of the new employee and has been cited as contributing to improved retention of new employees.

INTRODUCTION

Purpose

Reducing employee turnover rates and recruitment costs are top priorities for Human Resources (HR) professionals and executives worldwide. Employee turnover costs are estimated to be between 50 and 100 percent of an employee's total annual cost, and this does not include the cost of the tacit knowledge lost by the organization when employees exit (Hom & Griffeth, 1995).

Organisations vary in size, geographic footprint, structure, industry, technology utilisation and more. Though it is widely accepted that organisations benefit from having a structured onboarding experience for new employees, there is no universal option for organisations to adopt a standardised onboarding process. Organisations can however internally standardise much of their onboarding process and experience for their new employees. However, this on its own does not guarantee low attrition and increased productivity. The Aberdeen Group 2011 report "Onboarding 2011: The Path to Productivity" claims that having a structured and standardised onboarding process does improve the quality of onboarding experience. However, the organisations included in their study still experience 42% new employee attrition within 3 years.

Simply providing a structured, standardised onboarding experience on its own does not achieve increased retention and productivity of new employees. Most onboarding that does occur tends to concentrate on competency and capability of new hires. Measuring competency and capability through skill testing is relatively simple to achieve, but this again does not necessarily lead to increased retention and productivity levels.

Most employee attrition that occurs in the first 18 months of employment is employee-driven rather than employer driven, however, traditional approaches to improving employee on-boarding effectiveness have been employer-centric and do not always address the employee's feelings, impressions and personal issues during the early weeks of employment (Hacker, 2004; Mohamed, Taylor, & Ahmad, 2006).

There is a need for consistency in approach to a measure across all organisations, to determine onboarding effectiveness. a standardized instrument for organizations that depend on objective data to drive improvements in HR onboarding processes. Such an instrument would be useful to help mitigate the risks of early employee attrition, achieve a faster return on investment (ROI) through discretionary effort and performance, facilitate constructive conversations between hiring managers and new talent, accelerate the time it takes for new employees to reach a minimum level competence and profit contribution, gather and analyze objective data to improve a company's talent retention strategy and protect the time and expense incurred during the recruitment/training processes. The current research describes the efforts undertaken to design such a tool for HR practitioners and implement it in one market to determine its effectiveness for use on a larger scale in worldwide markets and the subsequent research in multiple markets that prove its effectiveness. The implementation essentially serves as a pilot test of the instrument, the importance of which is described by Haralambos and Holborn (2008).

Background

In an effort to create a useful employee retention and performance improvement instrument, one researcher in the current study theorized that the traditional principles of

attachment theory could be applied to the workplace. The resulting survey instrument, The Employee Attachment Inventory (EAI), was designed to measure the level of bonding between the worker and the organisation based on employee perceptions impacted by the immediate manager's behaviour on the new employee during the first 120 days of employment. The EAI was pre-tested initially to 53 newly hired individuals at 20 companies in Australia over six months, and then introduced throughout Australia by HR practitioners to 2555 employees at more than 300 companies, as a larger scale pilot test of the instrument over 5 years with the intent of rolling out the tool worldwide in 2015 if the pilot test indicated success as a tool for HR practitioners in the Australian market. In 2019 an extended validation study was completed which included 3153 respondents across more than 300 organisations from 5 countries.

Approach to Study

The principal researcher and creator of the EAI theorized that traditional attachment theory could be applied to workplace relationships to measure a level of attachment of an employee to the organization. Attachment theory, as described in the literature review, was extended and applied to workplace relationships, and a survey instrument was designed, pre-tested and implemented in Australia, serving as a pilot test for use in the field. Data from the survey implementation were gathered and analyzed, and interviews were conducted with the HR practitioners at the organizations. The interviews provide qualitative, anecdotal data to support the instrument's viability and usefulness. The data from the survey implementations serve as a pilot test of the instrument for further use in its current market and for introduction

to new markets worldwide. Extended research questions were included from 2016 allowing for further validation and proof of the effectiveness of the instrument in global markets.

METHODS

The theoretical basis for the creation of the instrument is presented within the literature review. A survey instrument was created and implemented on a small scale by the primary researcher, and implementation continued as the tool was then introduced into the marketplace and used by HR practitioners in Australia over approximately five years. The EAI data were collected along with anecdotal interview data from managers of companies who employed the instrument and analyzed as a small pre-test followed by a larger pilot study of the instrument to test for reliability and validity. An extension of this study was conducted in 2019 based on the additional research questions included from 2016.

Literature Review

Ainsworth and Bowlby (1991) stated that if a child does not attach to the parent or caregiver, the child does not feel a sense of security, trust and value, or acceptance and belonging from the very beginning, and can have difficulty forming and sustaining healthy relationships throughout adult life. This study proposes that, like the infant/caregiver relationship, an employee/organization relationship exists whereby an employee who attaches to the organization early thrives in the work environment and is retained.

Literature regarding attachment theory, extending the theory to workplace attachment, and the creation of a survey instrument to measure the attachment relationship was gathered to support the study by searching various databases for peer-reviewed journal articles, initially using the search terms: attachment theory, employee engagement, human development, and survey instrument design. Peer reviewed journal articles were found on the specified search terms and the resulting articles' bibliographies were used to further identify primary sources. The above procedure was repeated until saturation was met by discovery of relevant, scholarly articles for this review.

Attachment theory. Attachment theory has its roots in developmental psychology and refers to the strength of the bond between a human child and parent or primary caregiver. The original theorists of attachment theory, Dr. John Bowlby and Mary Ainsworth, considered attachment and bonding to be an innate biological need of the infant, driven by their survival instinct (Ainsworth & Bowlby, 1991). Ainsworth & Bowlby introduced the core principle of attachment theory as an infant's need to develop a relationship with at least one primary caregiver in order for social and emotional development to occur. Infants use attachment figures, or primary caregivers, as a secure base from which to explore and to return. Parental responses lead to the development of patterns of attachment, which in turn guide the individual's perceptions, emotions, thoughts and expectations in later relationships.

Extending attachment theory to social structure attachment and employee engagement. Human beings at all stages of their lives are both genetically and neurologically geared to form relationships with others (Baumeister & Leary, 1995). The primary researcher in this study theorized that by looking at how relationships form between new employees and

their managers, one could equate the child/caregiver relationship to an employee/manager relationship, applying the principles of attachment theory to measure levels of bonding and assist employee retention.

Sturges, Guest, Conway & Davey (2002) found that high organizational commitment was found to be related to the extent to which employees reported receiving organizational career management help, whether formally through training and traditional onboarding, or with informal assistance such as being provided with advice and networking opportunities. Many of the constructs being analyzed by the EAI measure organizational commitment.

Creating the EAI. Applying Attachment Theory to employee engagement led to the conceptualization, creation and testing of the Employee Attachment Framework and Inventory. Similarities are seen between the process of designing and testing the EAI and how the internationally renowned Myers-Briggs Type Indicator® (MBTI®) instrument was developed and introduced. Essentially, both instruments were conceptualized by one or two individuals, tested and evaluated by many practitioners in the field and then, lastly, evaluated by social science and workforce development researchers.

The MBTI® was developed over time, primarily by one individual who was working to develop an instrument to test a theory (Center for Applications of Psychological Type, 2015). Over time, the creator of the instrument worked with others to implement and test, and ultimately the MBTI® caught the attention of other researchers in the field and transitioned into a popular tool in the marketplace. Similarly, the EAI was the brainchild and product of one individual who designed and tested the instrument. Eventually, practitioners implemented the EAI in the marketplace and researchers examined the survey data, vetting the EAI's validity and

reliability. The EAI, similar to the MBTI[®], was implemented in the actual marketplace with the intended audience and data was later analyzed for evaluation of the instrument as a viable HR tool.

Data collection and reporting with the EAI. Internet-based data collection has become widely accepted as a method for collecting survey data (Best & Krueger, 2004). Collecting the Employee Attachment Inventory online was a decision made early on in the conceptualization of the tool because of the flexibility of the Internet, and the ability to reach more people (Fuchs, 2008) in anticipation of eventually extending the tool to a worldwide market.

Strong, Ringer and Taylor (2001), in their survey research of stakeholder satisfaction, found that an organization's failure to meet expectations regarding information or performance does not necessarily result in stakeholder dissatisfaction. Rather, their structured field interviews of satisfied stakeholders indicated that an otherwise negative experience that is addressed appropriately by the organization need not result in stakeholder dissatisfaction. The creator of the EAI theorized that a report generated by the data collected by the instrument would serve as a springboard for targeted discussions to improve the relationship and bond between the employee and the organization. The manager receives the report and reviews it for areas where it appears the employee is moderate or low in attaching and allows the report to guide the discussions between the manager and the employee, thus strengthening the attachment bond and improving the onboarding process. The strengthening the level of Attachment of the new employee through this process results in increased or sustained satisfaction, certainty and effort of the new employee. This in turn results in a reduced risk of attrition and increased productivity levels.

PRE PRE-TEST AND PILOT

An initial version of the Employee Attachment Inventory was used to collect data regarding employee attachment to the hiring organization. The EAI has scaled questions designed to rate levels of employee attachment to the organization on twenty drivers: Recruitment and Selection, Pre-Employment, Orientation, Central Messages, Rotation, Incremental Learning, Accuracy of Job Representation, Manager Alignment and Accessibility, Business Awareness, Performance Objectives, Learning Path, Reasons for Joining, Vision and Career Path, Senior Leadership, Work/Life Balance, Co-Workers, Work Environment and Resources, Climate/Culture, Systems and Processes, and Safety and Behavior. Five equally weighted questions focus on each of the twenty drivers for a total of 100 questions in the EAI.

Demographic Profile of Survey Respondents

A total of 53 adult workers are included in the pre-test data set. The majority of the dataset is female (56.6%), with males representing 43.4 percent of the respondents. A total of 2555 adult workers are included in the pilot testing that was conducted for five years immediately following the six-month, small test. The majority of the respondents in the larger test were female (60%), with males representing 40 percent of the respondents.

Data Collection Procedures

The EAI was employed by HR practitioners in the field for the initial small study, followed by the larger scale five-year implementation. In all instances, the EAI was emailed to

the new employees on approximately their 90th day of employment. There were 100 questions that required a response based on a 5 point rating scale from strongly agree to strongly disagree.

Managers of EAI respondents were provided with a report for each of their employees and they held meetings with the employee and discussed the results of the reports. Interviews were conducted with some of the HR Executives at the organizations involved in the process to collect qualitative data for the current study.

Limitations

As a result of convenience sampling and by the intentional design of this study, only data from individuals in Australia were used for analysis in the initial stage of this study could not claim to be completely representative of the entire worldwide population demographic of workers. At the time it was unknown if there exist any factors unique to Australian workers that might affect the responses to the EAI and that would not be true of all workers, worldwide. Extensions to the study have included data from across 5 countries including Australia, New Zealand, USA, Canada and the UK.

The initial study was designed only as a test of the reliability and validity of the instrument for measuring employee attachment perceptions. The data on employee retention was not currently available in quantitative form, however, was gathered through qualitative research gathered from manager interviews conducted with EAI end users and HR Executives utilising their internal indicators and measures relating to retention and performance. The qualitative interview data gathered as part of this study confirmed that all organizations

recorded increased retention and individual performance enhancement based on pre EAI implementation and post EAI implementation internal measures.

The 2019 extension to the study further validated the EAI instrument and provided additional findings regarding the quantitative impact of manager interventions on employee effort, the correlation between the 20 Attachment drivers and the 4 core perceptions of Attachment and the impact and predictive qualities of “Certainty” on overall Attachment.

Data Analysis for Instrument Reliability and Validity

The American Educational Research Association (AERA), American Psychological Association (APA), and National Council on Measurement in Education (NCME) state that validity refers to the "appropriateness, meaningfulness, and usefulness of specific inferences made from test scores" (p. 9), and reliability is "the degree to which test scores are free from errors of measurement" (p. 19). For the purposes of establishing validity and reliability of this study's survey instrument, a pilot study was conducted as a preliminary test to adjust questions prior to collecting data from the target population, as per the best practices for pilot testing a survey instrument as outlined by Peat, Mellis, Williams & Xuan (2002, p. 57).

The pilot survey was initially administered to 53 individuals from the target population of employees who had been on the job for approximately 90 days (n=53). To initially test the validity of the Employee Attachment Inventory, the new employees responded to open-ended questions about the instrument itself. Respondents were asked if they had any problems completing the survey, if questions were difficult or too sensitive, if the language was unclear, if choices allowed them to answer as they intended, and if there was anything they would change

about the survey. The respondents indicated that the survey was simple to complete, contained clear language and offered responses that allowed them to understand and complete the survey easily.

For the 53 individuals in the pre-test phase, a Cronbach's Alpha was calculated for each of the question groups representing each of the 20 drivers to determine a level of internal consistency for each question group (Chronbach, 1951). The scores ranged from .635 to .903, indicating internal consistency for each of the 20 drivers. Table 1 shows the results of the internal consistency testing for the data set. Only four of the drivers fell below .736. The lowest levels of consistency were found for the questions on the drivers Orientation, Incremental Learning, Reasons for Joining and Work/Life Balance. The creator of the EAI moved forward with the second, larger phase of the pilot test with no revisions made to the questions, believing them to be in their best form.

Immediately following the pre-test to the small group of new hires (n=53), the primary researcher introduced the EAI on a larger scale by HR professionals in the Australian marketplace and it was administered to 2555 individuals at approximately their 90th day of employment. As with the smaller test, the larger pilot testing of the instrument included the full survey document and sought criticism of the survey as a whole to again test the validity, with additional space at the end for recommendations and comments. The results were similar with respondents indicating ease of use and a high level of understanding of what each question meant.

The data from the larger application of the instrument were analyzed for internal consistency as in the smaller study, with a Cronbach's Alpha calculated for each of the five

questions comprising each of the 20 drivers to determine how closely each set of questions rated the same driver. The scores ranged from .731 to .893, indicating a very good level of internal consistency for each of the 20 drivers and very closely matching the results of the initial, small testing of the instrument. Table 2 shows the internal consistency level of the data from the five-year instrument application. The same four drivers had the lowest level of question consistency but were much improved from the smaller test. None of the respondents expressed difficulty understanding or responding to the questions.

Finally, to further assess the effectiveness of the EAI and the usefulness of the report generated by the EAI system, a second researcher conducted interviews with HR managers of 10 organizations that implemented the EAI, supplementing the study data with explanatory, qualitative, rich descriptive data regarding how managers used the reports and what they felt was important to the organization.

Table 1
Internal Consistency 2008

Driver	Cronbach's Alpha
Recruitment and Selection	0.839
Pre-Employment	0.842
Orientation	0.635
Central Messages	0.755
Rotation,	0.806
Incremental Learning	0.689
Accuracy of Job Representation	0.869
Manager Alignment and Accessibility	0.881
Business Awareness	0.737
Performance Objectives	0.798
Learning Path	0.736
Reasons for Joining	0.674
Vision and Career Path	0.795
Senior Leadership	0.903

Work/Life Balance	0.674
Co-Workers	0.885
Work Environment and Resources	0.879
Climate/Culture	0.808
Systems and Processes	0.856
Safety and Behavior	0.880

Table 2
Internal Consistency 2009-2013

Driver	Chronbach's Alpha
Recruitment and Selection	0.840
Pre-Employment	0.829
Orientation	0.731
Central Messages	0.846
Rotation,	0.861
Incremental Learning	0.752
Accuracy of Job Representation	0.856
Manager Alignment and Accessibility	0.893
Business Awareness	0.817
Performance Objectives	0.837
Learning Path	0.831
Reasons for Joining	0.764
Vision and Career Path	0.792
Senior Leadership	0.893
Work/Life Balance	0.772
Co-Workers	0.882
Work Environment and Resources	0.858
Climate/Culture	0.861
Systems and Processes	0.845
Safety and Behavior	0.871

Qualitative Data Collection - Interviews with HR Executives

The qualitative data from the HR Executive interviews were coded with a system of identifying topics and themes. Goals for using the EAI, impressions about the instrument and

ensuing report, and resulting impact on engagement, retention and performance enhancement were documented. The top common goals and benefits of using the instrument included;

1. desire to positively impact unwanted attrition within first 18 months of hire
2. desire to increase effort and performance of new hires from date of hire
3. use of a framework for understanding new hire perceptions during onboarding
4. improved awareness for managers of their behavioural impact on new employees
5. longer term impact on engagement indicators
6. measurement of workforce patterns associated with new hires across demographics

Impressions about the instrument and report were very positive with respondents citing as the top three reasons both managers and employees appreciated using EAI;

1. ease of use
2. thoroughness
3. relevancy and value

Human Resources Executives provided many examples of how the report is structured in a way to guide managers through a productive discussion resulting in higher attachment to the organization.

Multiple examples were provided sharing quantifiable results in improved retention, engagement and performance. A selection of these are outlined as follows.

One Human Resources Executive shared “We started using the EAI at a time when the organization made a conscious decision to systematically look at the employment life cycle, but we didn’t have data to tell us what was causing our turnover issues, particularly in the first 2 years of employment. The EAI has helped in engaging our managers to understand

attachment and have meaningful conversations with new employees. It has led to us understanding causes of turnover and how to improve the bonding which occurs in the first 120 days. We have seen alignment between the results of using EAI and our engagement tools, showing gaps in our business. We have seen a clear connection between using the EAI and increases in retention and performance of new hires. Very valuable.”

Another HR Executive stated, “Using the EAI has led to increased engagement between managers and their employees, better manager buy-in to the onboarding process, and less turnover during the first year.” Another HR Executive said “by using the EAI we are providing a measure and guidance to managers about the perceptions of their new hires. They are holding conversations and developing better relationships with their new employees as a result of using the EAI. Managers and new hires are mutually committing to, action plans that strengthen the attachment of the new hires and we are observing behavioral change in both the managers and the employees as a result of this. We have seen employees who would otherwise have left the organization, stay and thrive because of this instrument.”

2019 Study Extension

In this study extension, there are four focus questions that the researchers sought to answer. Each will be answered in accordance with varying participant numbers, as each required separate analytical techniques. The data was analysed using the statistical package IBM SPSS, version 26.0.0.0. Participants were excluded from analysis if they reported being under the age of 18 years, had not answered each of the requisite questions provided or were deemed as not answering the questions truthfully.

Focus Point 1

Firstly, researchers were interested in identifying whether managers discussing the results of their employees' EAI report, changed or sustained the effort of those employees between their 90- and 130-day onboarding periods. However, 413 and 1685 participants were deleted, as they did not report their effort before or after they received their EAI report feedback respectively. Similarly, 727 participants were deleted, as they did not respond to whether an action plan was developed. Finally, a further 82 participants were deleted, as no action plan was developed with their manager.

Two hundred and forty six participants were used to understand whether employees' effort increased upon having a discussion with the managers, and then developing a corresponding action plan. An Exact Paired Samples Sign Test was used to compare employee effort differences at both 90 and 130 days. Employees' effort ratings were significant, and moderately positively higher, after receiving an action plan from their manager, as illustrated below.

When viewing the 'Descriptive Statistics' section, employees' average effort increases from 7.26 at 90 days to 8.96 at 130 days. Furthermore, when viewing the 'Frequencies' table, below the 'Sign Test' heading, 95 of the total 246 employees measured, demonstrated an increase in their effort in response to receiving an action plan after discussions with their manager. However, only 51 employees revealed a decrease in effort. Finally, 100 employees

confirmed consistent ratings of effort from day 90 to day 130. However, 64 of these employees had initially rated their effort as a 10 and could thereby no longer aim to improve.

In summary, this data illustrates that when employees receive a comprehensive action plan, designed and implemented in accordance with their manager, an employee's self-reflected effort rating will improve around 18% in 40 days.

➔ **NPar Tests**

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	25th	Percentiles 50th (Median)	75th
Effort_Since_90_Survey	246	8.9593	1.36963	1.00	10.00	9.0000	9.0000	10.0000
Employee_Effort	246	7.2602	3.80941	.00	10.00	7.0000	9.0000	10.0000

Sign Test

Frequencies

		N
Employee_Effort - Effort_Since_90_Survey	Negative Differences ^a	95
	Positive Differences ^b	51
	Ties ^c	100
	Total	246

- a. Employee_Effort < Effort_Since_90_Survey
- b. Employee_Effort > Effort_Since_90_Survey
- c. Employee_Effort = Effort_Since_90_Survey

Test Statistics^a

	Employee_Effort - Effort_Since_90_Survey
Z	-3.559
Asymp. Sig. (2-tailed)	.000

a. Sign Test

Interestingly, this increase in effort during the onboarding period may not be caused from an increase in attachment, as there was a decrease in correlation between effort at 90 days and 130 days in all 4-core perception and Total Attachment.

			Employee_Effort	Effort_Since_90_Survey
Spearman's rho	Employee_Effort	Correlation Coefficient	1.000	.325**
		Sig. (2-tailed)	.	.000
		N	246	246
	Effort_Since_90_Survey	Correlation Coefficient	.325**	1.000
		Sig. (2-tailed)	.000	.
		N	246	246
	Driver_1_Safety_and_Security	Correlation Coefficient	.626**	.219**
		Sig. (2-tailed)	.000	.001
		N	246	246
	Driver_2_Trust_and_Value	Correlation Coefficient	.572**	.166**
		Sig. (2-tailed)	.000	.009
		N	246	246
	Driver_3_Acceptance	Correlation Coefficient	.592**	.212**
		Sig. (2-tailed)	.000	.001
		N	246	246
	Driver_4_Belonging	Correlation Coefficient	.591**	.183**
		Sig. (2-tailed)	.000	.004
		N	246	246

Total_Average	Correlation Coefficient	.355**	.195**
	Sig. (2-tailed)	.000	.002
	N	246	246

Whilst there are initially very strong, positive correlations between employee effort and each of the 4-core perceptions, 20-drivers and Total Attachment, these correlations decrease on the 130th day on an employees' onboarding experience. As correlations are a measure of the linear relationship between two quantitative variables (e.g. variables that carry a numerical value or quantity, such as height and weight), and if the true relationship is non-linear, the results may be missed. As a large amount of values at the 130-day measuring period are significantly higher than at the 90-day period, this may explain the discrepancy.

Furthermore, this may be caused from an increased comfort level experienced by the employee; in that work tasks may be better understood and completed more efficiently.

Therefore, the employee no longer requires the same amount of effort to complete similar tasks, and may actually complete more tasks, as we have demonstrated the average employee experiences an overall effort increase. Furthermore, this result demonstrates the power of prioritizing and implementing our well-designed action plans, as any moderate or low scoring drivers will be flagged by the report, allowing for coordinated and harmonized discussions around improvement, which should effectively increase employee effort.

Focus Point 2

Drivers	Core Perception 1: Safety and Security	Core Perception 2: Trust and Value	Core Perception 3: Acceptance	Core Perception 4: Belonging	LOW	HIGH
Recruitment and Selection	0.473	0.521	0.476	0.484		
PreEmployment	0.482	0.503	0.461	0.486		
Orientation	0.441	0.455	0.413	0.434	4	
Central_Message	0.507	0.545	0.478	0.502		5
Rotation	0.448	0.453	0.401	0.427	3	
Incremental_Learning	0.481	0.5	0.477	0.491		
Accuracy_of_Job_Representation	0.499	0.497	0.47	0.486		
Manager_Alignment_and_Accessibility	0.491	0.528	0.491	0.493		
Business_Awareness	0.441	0.409	0.378	0.413	1	
Performance_Objectives	0.492	0.502	0.479	0.494		
Learning_Path	0.447	0.439	0.388	0.436	2	
Reasons_for_Joining	0.47	0.495	0.451	0.479		
Personal_Vision_and_Career_Path	0.472	0.491	0.44	0.477		
Senior_Leadership	0.484	0.551	0.48	0.496		
Work_Life_Balance	0.498	0.5	0.455	0.481		
CoWorkers	0.53	0.588	0.585	0.596		1
Physical_Work_Environment_and_Resources	0.534	0.551	0.506	0.53		4
Climate_and_Culture	0.525	0.555	0.508	0.534		3
Systems_and_Processes	0.481	0.466	0.436	0.453	5	
Safety_and_Behaviour	0.548	0.552	0.538	0.542		2
Total_Average	0.551	0.568	0.516	0.548		

1 = Lowest 1 = Highest



A further analysis sought to derive the impact that each of the four core perceptions placed on the 20 drivers associated with the EAI report. Of the 3,153 total participants, 1,020 participant responses were deleted, as they did not respond, in full, to any of the four core perceptions provided. As the remaining responses were, not normally distributed as

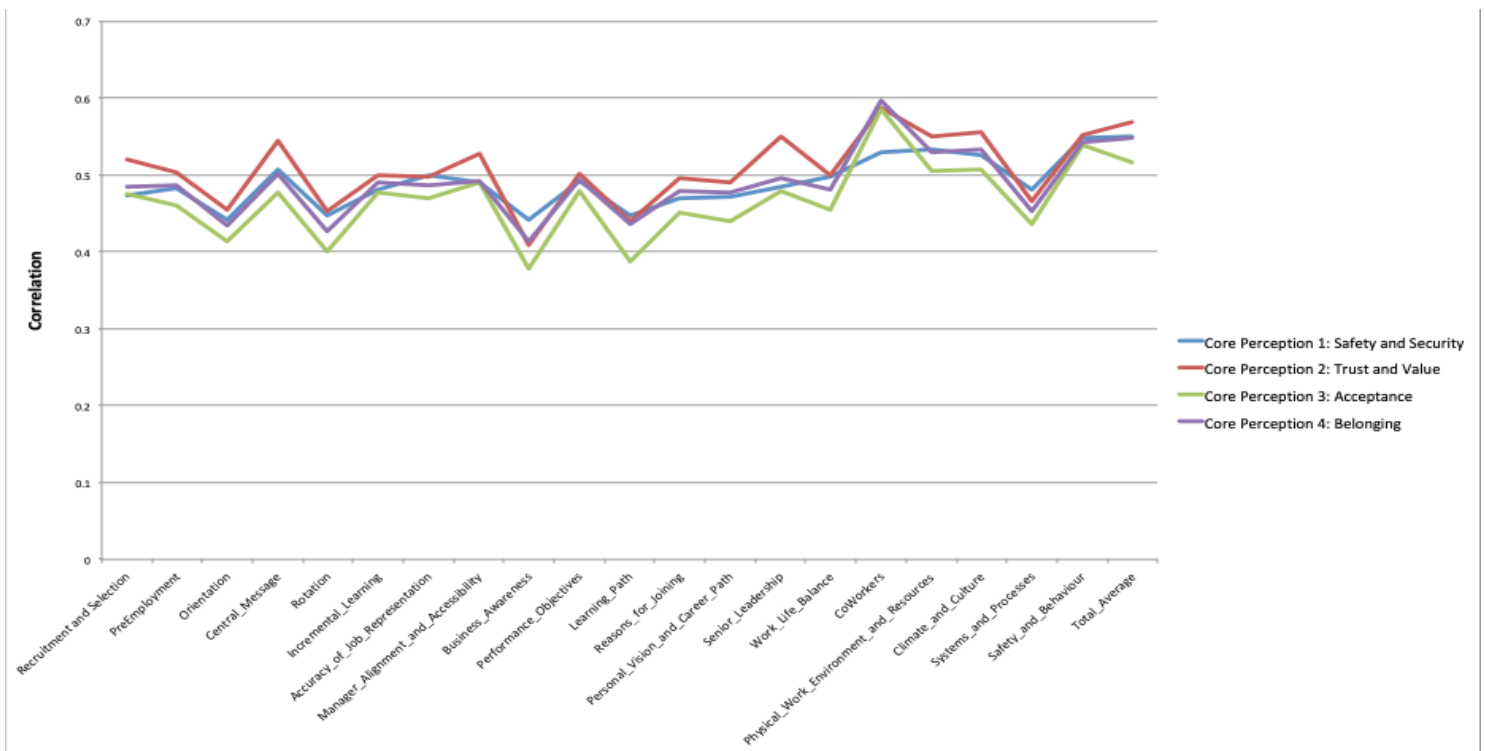
determined via completion of the Shapiro-Wilks test, a Spearman's Rho correlational analysis was conducted as opposed to a traditional Pearson correlational analysis. The results indicated that each of the four Core perceptions was, at least, moderately positively correlated with each of the 20 drivers, as demonstrated above.

Furthermore, the 5 highest and 5 lowest drivers are shown on the right of the table, with co-workers being rated the highest, along with safety and behaviour, climate and culture, physical work environment and resources and the company's central message. Conversely, business awareness was the lowest, in accordance with learning path, rotation, orientation and systems and process.

In terms of the four core perceptions, Core Perception 1: Safety and Security was most positively correlated with the driver 'Safety and Behaviour', indicating the presence of a strong, positive correlation, $r_s = .55, p < .01$, two-tailed, $N = 2,133$. Core Perception 2: Trust and Value displayed a strong, positive correlation with the driver 'Co-Workers', $r_s = .59, p < .01$, two-tailed, $N = 2,133$. Core Perception 3: Acceptance demonstrated a strong, positive correlation with the driver 'Co-Workers', $r_s = .59, p < .01$, two-tailed, $N = 2,133$. Core Perception 4: Belonging exhibited a strong, positive correlation with the driver 'Co-Workers', $r_s = .60, p < .01$, two-tailed, $N = 2,133$.

Analysing this data, it is clear that the driver 'Co-Workers' play a pivotal role in determining the overall total average attachment, as demonstrated with a very strong, positive correlation, $r_s = .86, p < .01$, two-tailed, $N = 2,133$, between the two. It is also a clear positive sign that the Core perception 'Safety and Security' demonstrated the strongest positive correlation

with the driver 'Safety and Behaviour', indicating that each of these two elements demonstrate strong face validity. Furthermore, the lowest of the correlations between the drivers and core perceptions is between business awareness and acceptance, which shows a correlation of $r_s = .39$. However, this is still a moderately, positive result, and displays the overall strength of the associations and relationships between both the drivers and core perceptions. This is further demonstrated below.



It may be important to provide further explanation as to what a correlational analysis is.

Correlation analyses are a method of statistical evaluation used to study the strength of a relationship between two, numerically measured, continuous variables, such as height and weight. It is generally useful when a researcher wants to establish if possible, connections exist between variables. It is often misunderstood that correlation determines cause and effect;

however, this is not the case because other variables that are not present in the research may have impacted on the results. If correlation is found between two variables it means that when there is a systematic change in one variable, there is also a systematic change in the other; the variables alter together over a certain period of time. If there is correlation found, depending upon the numerical values measured, this can be either positive or negative.

- Positive correlation exists if one variable increases simultaneously with the other, i.e. the high numerical values of one variable relate to the high numerical values of the other.
- Negative correlation exists if one variable decreases when the other increases, i.e. the high numerical values of one variable relate to the low numerical values of the other.

Pearson's product-moment coefficient is the measurement of correlation and ranges (depending on the correlation) between +1 and -1. +1 indicates the strongest positive correlation possible, and -1 indicates the strongest negative correlation possible. Therefore, the closer the coefficient to either of these numbers the stronger the correlation of the data it represents. On this scale 0 indicates no correlation, hence values closer to zero highlight weaker/poorer correlation than those closer to +1/-1.

If there is correlation between two numerical sets of data, positive or negative, the coefficient worked out can allow you to predict future trends between the two variables. However, you must remember that you cannot be 100% sure that your prediction will be correct because correlation does not determine cause or effect.

In terms of our context, high numerical values of one variable relate to high numerical values of another. Therefore, this means that those employees who have high Total Average Attachment scores, will display correspondingly high values of each of the four core perceptions: Security, Trust and Value, Acceptance and Belonging. This data therefore suggests that if an employee feels secure, trusted and valued, accepted and that they belong in the company, they will have a correspondingly high level of attachment to the company – and stay actively engaged and present for longer. This high attachment value is most often generated through the five highest values listed above.

Focus Point 3

The third analysis sought to observe the differences between employees who answered 'Yes' and 'No' to the question "Did you discuss your 90-day Onboarding survey results with your manager?" Of the 3,153 total participants, 1,792 and 735 participants were deleted, as they provided no responses to whether they had discussed their onboarding survey results with their manager and what their onboarding experience was respectively. As above, the results were not normalised, and as a result a Spearman's Rho Correlational analysis was conducted. However, as categorical data cannot be easily performed using correlational data, each category was dummy coded into numerical variables. As such, each category was afforded a number of N-1 into order to create separate classifications. As demonstrated below, these categories were: No results were discussed and results were discussed as well as each employees' onboarding experience as being Less satisfying and the same or more satisfying after managerial discussions. It is important to note that those employees who rated their

experience as being either the same or more satisfying were combined, as their levels of satisfaction can only decrease or stay the same, so were combined.

Correlations

		No_Results_Discussed	Yes_Results_Discussed	Less_Satisfying	Same_or_More_Satisfying	
Spearman's rho	No_Results_Discussed	Correlation Coefficient	1.000	-1.000**	.326**	-.326**
		Sig. (2-tailed)	.	.	.000	.000
		N	626	626	626	626
	Yes_Results_Discussed	Correlation Coefficient	-1.000**	1.000	-.326**	.326**
		Sig. (2-tailed)	.	.	.000	.000
		N	626	626	626	626
	Less_Satisfying	Correlation Coefficient	.326**	-.326**	1.000	-1.000**
		Sig. (2-tailed)	.000	.000	.	.
		N	626	626	626	626
	Same_or_More_Satisfying	Correlation Coefficient	-.326**	.326**	-1.000**	1.000
		Sig. (2-tailed)	.000	.000	.	.
		N	626	626	626	626

** . Correlation is significant at the 0.01 level (2-tailed).

The results shown above suggested that those participants who had confirmed discussion with their managers regarding their 90-day onboarding survey had moderate, positive statistically significant correlations with a more satisfying onboarding experience, $r_s = .33$ $p < .01$, two-tailed, $N = 626$. That is, having a discussion with one's manager is correlated with having a more positive experience overall.

Similarly, those who reported that they did not discuss the results of their 90-day onboarding survey with their managers, reported a moderate, negative statistically significant correlation with a more satisfying onboarding experience, $r_s = .33$, $p < .01$, two-tailed, $N = 626$. Furthermore, these results in conjunction suggest that discussing the 90-day onboarding survey results with a manager produces a more positive onboarding experience for new employees.

Focus Point 4

The final research question aimed to analyse an employee's total level of attachment and whether they made a correct decision to work for the organisation in which they are currently employed. Of the 3,153 participants, I deleted 1,131 participants as they did not respond to the question concerning whether their current employment situation was a good choice for them personally or not. I also deleted a further 15 participants, as they did not respond to any of the four core perceptions listed in the survey. In order to complete this analysis, the requisite variables were dummy coded.

In the table below, those employees who were 'Not Certain' they had made the correct decision to work for their current employers displayed weak, negative correlations with each of the four Core Perceptions (incorrectly labeled as Drivers) and Total Average Attachment ($r_s = -.18, p < .01$, two-tailed, $N = 2,007$). Those employees who were 'Somewhat Certain' displayed moderate, negative correlations with Total Average Attachment ($r_s = -.35, p < .01$, two-tailed, $N = 2,007$). This suggests that if an employee believes they have potentially made a mistake in their recent employment, they will demonstrate significantly less attachment towards their current employers; and are more likely to resign. However, if employers are able to utilise the Employment Attachment Index effectively, the risks of employee resignation may be mitigated, as managers will not only be able to flag disgruntled employees, but also what their specific concerns are, and rectify them appropriately.

Conversely, those employees who were 'Very Certain' they had made the correct employment decision, displayed moderate to strong, positive statistically significant

correlations to their total attachment, $r_s = .40$, $p < .01$, two-tailed, $N = 2,007$. This suggests that if an employer can make every employee feel safe and secure in their new work environment, as well as trusted and valued, accepted and that they belong within the company, they will demonstrate strong feelings of attachment be very sure they made the correct decision.

		Correlations								
			Driver_1_Safety_and_Security	Driver_2_Trust_and_Value	Driver_3_Acceptance	Driver_4_Belonging	Total_Average	Not_Certain	Somewhat_Certain	Very_Certain
Spearman's rho	Driver_1_Safety_and_Security	Correlation Coefficient	1.000	.557**	.498**	.503**	.556**	-.141**	-.265**	.306**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Driver_2_Trust_and_Value	Driver_2_Trust_and_Value	Correlation Coefficient	.557**	1.000	.808**	.809**	.582**	-.172**	-.287**	.338**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Driver_3_Acceptance	Driver_3_Acceptance	Correlation Coefficient	.498**	.808**	1.000	.881**	.526**	-.150**	-.292**	.334**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Driver_4_Belonging	Driver_4_Belonging	Correlation Coefficient	.503**	.809**	.881**	1.000	.560**	-.164**	-.318**	.365**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Total_Average	Total_Average	Correlation Coefficient	.556**	.582**	.526**	.560**	1.000	-.179**	-.354**	.404**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Not_Certain	Not_Certain	Correlation Coefficient	-.141**	-.172**	-.150**	-.164**	-.179**	1.000	-.068**	-.308**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.002	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Somewhat_Certain	Somewhat_Certain	Correlation Coefficient	-.265**	-.287**	-.292**	-.318**	-.354**	-.068**	1.000	-.928**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.002	.	.000
		N	2007	2007	2007	2007	2007	2007	2007	2007
Very_Certain	Very_Certain	Correlation Coefficient	.306**	.338**	.334**	.365**	.404**	-.308**	-.928**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.
		N	2007	2007	2007	2007	2007	2007	2007	2007

** . Correlation is significant at the 0.01 level (2-tailed).

Furthermore, I wanted to analyse how well we could predict Total Attachment with a linear combination of each of the responses to the question regarding the certainty behind their employment choice. I therefore completed a multiple regression analysis.

Therefore, if we were to predict someone's overall attachment score using only their responses to the above question regarding the certainty behind their employment choice, we would need to use an equation. The table below looks at each of the predictor's impact on the regression model individually.

Coefficients ^a													
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	79.662	.522		152.580	.000	78.638	80.686					
	Not_Certain	-9.321	1.542	-.125	-6.043	.000	-12.346	-6.296	-.253	-.134	-.119	.905	1.105
	Very_Certain	11.421	.574	.413	19.891	.000	10.295	12.547	.452	.406	.393	.905	1.105

a. Dependent Variable: Total_Average

From this, we can generate an equation that can give values that can predict employee's overall attachment, based on their answers provided. Looking at the values from the 'Unstandardised B' heading on the far left, we get the following equation:

$$\text{Total Attachment} = 79.662 - 9.321(\text{Not Certain}) + 11.421(\text{Very Certain})$$

According to the SPSS regression analysis, in terms of prediction, 'Somewhat Certain' offered no predictive utility, so it was removed by the program. This means that whatever value was placed in the 'Somewhat Certain' part of the equation, the overall values relating to Total Attachment would not change.

As an employee can only be Not Certain or Very Certain, we would have to compare two separate employees' predicted Total Average Attachment, and make comparisons to the differences. The following two equations demonstrate this:

Not Certain

$$\text{Total Attachment} = 79.662 - 9.321(1) + 11.421(0)$$

$$= 70.341$$

Very Certain

$$\text{Total Attachment} = 79.662 - 9.321(0) + 11.421(1)$$

$$= 91.083$$

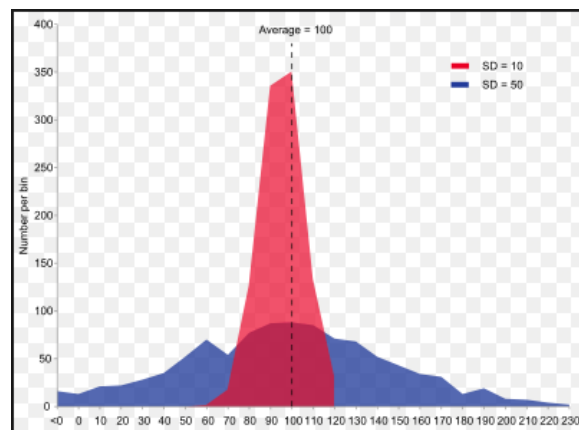
These results show that if an employee believes they have made a correct decision throughout the onboarding process concerning their employment, they will have a predicted attachment score nearly 21 points higher than a corresponding employee over the same period of time.

In accordance with a multiple regression analysis, varying other requisite information must be discussed. For example, in the table below, is the 'Model Summary', which contains the R-Square. The R-Square represents the proportion of variance in the criterion (Total Attachment) that can be accounted for by the predictor variables in combination (Very and Not Certain). In general, the higher the R-Squared, the better the model fits your data.

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467 ^a	.218	.217	9.62702

a. Predictors: (Constant), Very_Certain, Not_Certain
b. Dependent Variable: Total_Average

R-Square is a statistical measure of how close the data is to the fitted regression line, or more simply, to what extent the variance of one variable explains the variance of the second variable. Variance is itself a measure of how far sets of numbers are spread out from the means (average). A high variance indicates a large spread, whilst a small variance conversely indicates a small spread. This is demonstrated below:



The red cluster would dictate a small variance, because all of the data is very close to the average (= 100), whereas the blue cluster is more spread out. However, both clusters have the exact same average of 100; the blue with a much larger variance.

In terms of our data, an R-Square value of 22% suggests that 78% of the variance in the model is due to outside factors. This means that individuals concerns surrounding their employment decision may not be the biggest impact towards predicting attachment.

However, a limitation of the R-Square value is that it does not indicate whether a regression model is adequate. You can have a low R-Square for a good model or a high value for a poor model that does not fit the data. This is generally the case when trying to predict human behaviour, including the psychology field, whereby typical R-Square values are well below 50%. Humans are simply difficult to predict mathematically. In our analysis, whilst the R-Square provides an estimate of the strength if the relationship between the model and the response variables (i.e. Attachment and Not Certain and Very Certain), it DOES NOT provide a formal hypothesis test for the relationship. In order to determine that the F-Test, shown below, determines whether this relationship is statistically significant.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51822.787	2	25911.393	279.581	.000 ^b
	Residual	185729.760	2004	92.680		
	Total	237552.547	2006			

a. Dependent Variable: Total_Average
b. Predictors: (Constant), Very_Certain, Not_Certain

When observing the table above, notice the 'F' and 'Sig' headings on the right. The 'Sig' value of .000 suggests that the relationship between certainty and total attachment is statistically significant. Based off this information, a rudimentary hypothesis can be made suggesting that those employees who demonstrate low certainty towards their employment choice will demonstrate significantly less total attachment towards their current employers than those employees who are very certain about their recent employment decision.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Applying the Theory

The researchers in this study have demonstrated how the binding principles of attachment theory can be applied to measure and assist employee retention and performance contribution in the workplace. It should be noted that in this theory, it is the behavioral impact of the direct manager that has the most influence over the strength of the bond between the new employee and the organization, and thus, it is the direct manager who takes on the primary caregiver role in the bonding scenario when applying attachment theory to the workplace. Therefore, when new employees join an organization, they will attempt to attach with the organization via their manager in a process similar to that of offspring to parent to wider family social structure attachment which is based on perceptions of security, trust and value, acceptance and belonging. In the workplace scenario, if the employee fails to attach to the organization via the manager, this will impact the entire relationship the individual has with the organization from a productivity and engagement perspective.

The primary researcher and creator of the EAI theorized that there are four components to consider when applying attachment theory to the workplace and each one is a component and consideration of the EAI as it exists in its current format: The Critical Attachment Period (CAP), The Direct Manager's Influence/Impact, Core Attachment Perceptions and Key Response Behaviors. These are the focus areas of the Employee Attachment Inventory.

Critical Attachment Period. When new employees join an organization, they go through the "Critical Attachment Period" (CAP). This is a period of time when the core attachment perceptions are fluid and formative. For a new employee the CAP occurs during their first 120 days of employment. During this time, a two-way assessment and bonding process is taking place between new employees and the organization. First, the organization is assessing both their competency, capability and potential, future contribution of the new employees, along with each individual's cultural fit. In other words, the organization is determining whether they have made the right hiring decision. Meanwhile, employees are actively assessing whether they have made the right choice, determining how well they fit in to the culture of the team and the organization, the degree to which the experience matches their expectations and whether they can visualize being a productive member of the team in the long term. The point at which a reliable measure of the attachment perceptions can be made is at the 90th day of employment. This is 30 days prior to the end of the CAP and still at a time when core attachment perceptions can be modified based on the behavioral impact of the primary caregiver. Therefore, the EAI should be administered at or as close to the 90-day mark as possible and discussions between the manager and employee should begin soon after the date of measurement, but well before the end of the critical attachment period which is the 120th day of employment. This is

regarded as the window of opportunity to shift any attachment driver perceptions that are lowering the core perceptions of Security, Trust & Value, Acceptance and Belonging.

The Direct Manager's Influence/Impact. Just as a child forms an attachment to their primary caregiver, within a workplace context the primary caregiver is typically the employee's Direct Manager. The impact of the direct manager is therefore significant in helping the new employee attach to the organization. The EAI is an instrument that measures the core perceptions of Security, Trust & Value, Acceptance and Belonging based on the environmental drivers that are most significantly influenced by the direct manager's behavioral impact.

Core Attachment Perceptions. The strength of attachment between the employee and organization is based on the core attachment perceptions of security, trust, value, acceptance and belonging. These core attachment perceptions are formed based on 20 workplace drivers, each represented by 5 questions in the EAI. These drivers describe and quantify perceptions such as the professionalism experienced during the recruitment and selection process, the clarity of pre-employment communication, the effectiveness of the orientation process, the availability of training and incremental learning, whether the job description truly reflects the role and whether the employee understands the performance expectations.

Key Response Behaviors. The strength of bond as determined by the employee's perceptions of the 20 workplace drivers leads to key response behaviors which include risk of attrition and discretionary effort and performance. Discussions between the manager and employee focus how to strengthen the employee experience or perceptions based on the 20 workplace drivers. The outcome of which is to develop and implement a mutually agreed action plan which addresses any driver identified as being lower than desired. The result is that the

manager's behavior changes and in turn impacts the attachment perceptions of the new employee. If attachment is increased then the risk of attrition decreases and the discretionary effort and performance output of the new employee increases.

Summary

This study provides data to support the viability of extending Attachment Theory to the workplace and the reliability and validity of the Employee Attachment Inventory as a tool for HR practitioners to accurately measure the levels of attachment that a new employee has for the organization at the 90-day point. Further, this study supports the premise that the report generated by the EAI is a valuable tool for managers to use to improve communication, understanding and develop a plan of action to bridge the gaps where the new employee may feel the organization can improve their onboarding and attachment experience.

Next Steps for the Employee Attachment Inventory

The EAI extends Attachment Theory to describe workplace relationships and account for varying levels of employee attachment to the organization. Further, the EAI is a tool designed to measure employee attachment and is the very device by which practitioners can improve employee attachment, certainty, effort and productivity, thereby improving worker retention and ROI from new hires.

The instrument was revised after the extended implementation based on additional research regarding the superiority of sliding 100 point scales versus 5-point ratings for collecting data along a continuum (Funke & Reips, 2012), and has been reintroduced into a wider market for continued use by HR practitioners. In its current state, the Employee

Attachment Inventory retains the open-ended questions regarding the individual's thoughts about the survey for continuous improvement purposes.

The Employee Attachment Inventory is now a patented instrument for measuring the strength of bond between a new employee and the organization within the first 90 days of employment. It measures attachment perceptions from the employee-centric position.

Although attachment perceptions are measured at the 90-day mark, the bonding and attachment period extends to 120 days. This means that managers are given a window of opportunity to address any perceptions that are lower than desired, across the 20 drivers measured within the EAI. Use of the EAI is not a guarantee of a reduction in attrition or increase in productivity. However, all organisations included in the research did experience these effects of implementing the EAI.

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