

Onboarding Effects on Engagement and Retention in the IT Sector

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ABSTRACT

Employee turnover is costly to businesses; replacing one employee costs 90–200% of the employee's annual salary (Allen, 2008; Cascio, 2006). Business leaders know that ineffective onboarding may be a component of the problem. This quasi-experimental study compares results from three annual cohorts of Associate Software Engineers who participated in a nine-month extended onboarding program ($n = 184$) and those who did not ($n = 261$). Specifically, this quasi-experimental study used a chi-square test to compare retention. The extended onboarding group had significantly higher one-year retention than the control group. The results of this study suggest that longer onboarding may be a solution for the human resource community regarding long-term engagement and retention.

KEYWORDS

onboarding, engagement, turnover, organizational development

ONBOARDING EFFECTS ON LONG-TERM ENGAGEMENT AND RETENTION

Recruiting, hiring, and retaining top talent is a strategic driver for organizations. To remain competitive for talent, tech companies must have innovative solutions to retain talent. A survey conducted by the Institute of Corporate Productivity (i4CP) discovered a direct correlation between effective onboarding and increased engagement, retention, and productivity (Martin, 2018). Onboarding is the program or process that assimilates new employees into the organization by creating a psychological contract between the organization and new employees based on the unique needs of the new employee (Caldwell & Peters, 2018). The most effective onboarding programs focus on “personal identity socialization” (Cable et al., 2013, p. 24). This concept emphasizes uncovering the new employees' strengths and interests to channel into their work for ultimate success (Cable et al., 2013). Employee engagement has a distinct impact on employee retention (MacIntosh & Doherty, 2010). Employees with high levels of engagement emotionally identify with the organization and participate in meaningful work. These elements translate into employees who stay with an organization (Eldor & Vigoda-Gadot, 2017). Conversely, employees with low levels of engagement display an emotional disconnect with the organization and their work and are most likely to depart the organization (Kahn,

1990). Employees leave an organization for various reasons, with poor onboarding being a primary driver as the new employees miss the emotional connection with the organization (Bauer, 2010). Onboarding is the element that helps employees transition from being an outsider to an insider by gaining the knowledge, skills, and abilities to be successful (Bauer & Erdogan, 2011). According to the Society of Human Resource Management (SHRM) data from surveys and exit interviews, most employees state they leave within the first two years because of poor onboarding, lack of training, and few advancement opportunities in the organization (Allen, 2008). These three elements create a psychological contract between the employee and the organization and are part of the employee lifecycle.

EMPLOYEE LIFECYCLE

The employee lifecycle explains where onboarding, engagement, and retention fall within an employee's time with an organization. The employee lifecycle includes: attracting, recruiting, hiring, onboarding, training, managing performance, and offboarding (Cattermole, 2019). Onboarding and ongoing training encompass all the tools, training, policies, and procedures that support an employee's total experience with an organization. Beginning with



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initial recruiting, the employee lifecycle continues to orient the new hires, advances to ongoing skill development and connection to an organization, and concludes with offboarding to a new position either inside or outside of the original organization (Smither, 2003).

Overseeing the employee lifecycle is vital to all organizations. Employees make connections within each step of the employee lifecycle. When employees feel valued at each stage of the employee lifecycle, they will have higher engagement and retention levels (Cattermole, 2019). Research shows that onboarding is a vital part of creating an employee connection with the organization (Bauer, 2010).

Onboarding

The definition of onboarding varies throughout the literature. However, most definitions include the element of integrating with the organization. Effective onboarding extends benefits to the new employee and organization by ensuring an emotional connection is established, thereby beginning the path to higher employee engagement (Stein & Christiansen, 2010). Onboarding programs are designed to acclimate the new employee to the culture and expectations of the organization. Organizational effectiveness is higher for those companies that create a valuable onboarding experience (Bauer & Erdogan, 2011). Research shows that a comprehensive onboarding program that connects the new employee to the organizational culture and meaningful work leads to increased engagement, productivity, and overall retention (Snell, 2006). Yet, other research shows that most conventional organizational onboarding programs do not provide the culture connection or success on the job; rather, they supply new employees with a plethora of information that does not help them assimilate to the organization but rather overwhelms them (Caldwell & Peters, 2018). The cascading effect of successful onboarding enhances the overall employee experience, resulting in increased productivity and improved retention (Metcalfe, 2019).

Most organizations, however, do not have a formal onboarding process. This lack of onboarding has immediate implications for employee engagement and retention. Only 32% of organizations have a formalized onboarding process (Gillespie Associates, 2016). The critical period to create an emotional connection between the organization and the new employee's work occurs within the first 12–18 months (Grillo & Kim, 2015). Therefore, having an onboarding program that meets new employees' varied needs should be a vital concern for employers.

Engagement

Employee engagement is the cornerstone of the relationship between the organization and the employee. Many professionals in the corporate space use the terms engagement and satisfaction interchangeably, but they are not the same concept. Employee satisfaction is how content an employee is with the organization (Sageer, 2012). Satisfaction influences engagement, but engagement encompasses much more. Engagement includes organizational contentment but also encompasses employees' level of commitment and discretionary effort (Snell, 2006). Discretionary effort is the level of effort that employees put forth going above and beyond their normal workload (Schaufeli, 2012). This level of effort stems from an intrinsic motivation, which is internal to the employee and what they find enjoyable (Ormrod, 2020). Highly engaged employees regularly put forth higher levels of discretionary effort.

However, most U.S. employees are not highly engaged. Gallup (2007) cites that only 33% of U.S. workers are highly engaged. Engagement begins in the onboarding phase as new employees begin to form a psychological contract with the organization (Caldwell & Peters, 2018).

When employees feel engaged in their workspaces, the employees and organization will experience success (Smith et al., 2016). Key levers that influence employee engagement are personal growth, leadership support, communication, and corporate engagement initiatives. Research conducted by Lambert and colleagues (2001) cites that high employee engagement correlates with low employee turnover. Organizations must understand that increasing engagement will help employees work at their maximum level (Byham & Wellins, 2015). By creating a trusting, supportive environment, employee engagement increases as new employees feel emotionally confident to bring their whole selves to work (Cooper-Thomas et al., 2018). The foundation for this level of trust and support begins on day one in employee onboarding. Organizations that make certain employees are emotionally engaged in their work will increase the probability of their length of service intention (Ormrod, 2020). Engagement also links to retention as 70% of new employees decide to stay within their first six months based on their level of emotional connectedness with an organization (Gillespie Associates, 2016).

Onboarding and Engagement

Organizations that ensure onboarding is effective increase the employee's experience in their time with an organization, which creates a more connected workforce. Starting a new job can produce high levels of anxiety. When roles are not clearly defined and the employee is uncertain about their duties, it can hinder the employee's ability to connect with the organization (Collins, 2019). Employees who engage in a structured onboarding process are 20% more engaged than those who do not (Grillo & Kim, 2015). An i4CP report states, "when new hires experience effective employee onboarding, it will establish a sense of engagement connectedness with the organization and help new hires become productive at a much faster rate" (Martin, 2018, para. 3). Conversely, ineffective onboarding hinders engagement and productivity (Nintex, 2018). Onboarding, therefore, is a fundamental step in beginning the engagement and retention of a new employee (Krasman, 2015; Snell, 2006).

Retention

U.S. employers compete in recruiting top talent. Currently, there are more job openings than employees to fill the roles. Employees within the technology sector control the job market and can be selective in where they want to work (Sears, 2017). The most recent Work Institute 2019 Retention Report cites 35% of employees will leave their jobs to work elsewhere by 2023, and voluntary turnover exceeded 27% in 2018 (Bearden et al., 2019). Employees do not remain at an organization for a variety of reasons.

There are two main types of turnover: voluntary and involuntary. An employee initiates voluntary turnover, while an organization initiates involuntary turnover (Allen, 2008). Human resource professionals categorize voluntary turnover in two categories: positive and negative. Positive voluntary turnover occurs when an employee has amassed new knowledge, skills, and abilities that land them a new role. Often, they are high-performing employees other

recruiters entice with increased salaries or benefits packages that the current organization cannot match. In this scenario, the employee is leaving on good terms for a role that will further benefit them and potentially their family, therefore considered positive turnover. Ultimately the organization upskilled the employees with a higher competency level, making them more marketable (Smither, 2003). Negative voluntary turnover results from a variety of reasons. An employee can experience a lack of connection with their everyday work duties, leader, or have a mismatch of ideals with the organizational mission, vision, and values. Negative involuntary turnover are those employees the organization must dismiss because of performance, behavior, or both (Allen, 2008). Turnover is preventable in certain areas. Organizations can utilize meaningful work strategies, creating a positive environment, and individual connectedness to increase retention (SHRM, 2016).

Exit interview data shows employees leave an organization because of poor onboarding, negative relationships with leaders, and lack of contribution and meaningful work (Heathfield, 2019). Employees perform higher when there is mutual respect between their leader, themselves, and the organization (Ma et al., 2018). Byham and Wellins (2015) state employees have a high need to feel as though they are contributing to the organization. Employers must align employees with what they do matters. Giving employees meaningful work results in a sense of purpose. A positive work environment is one of respect, collaboration, and trust (Byham & Wellins, 2015). Organizations can leverage retention strategies to decrease the outflow of their employees. While it is a common misconception that compensation is a key driver in retention, research shows focus on meaningful work, creating a positive environment, and individual connectedness can considerably increase retention (Ma et al., 2018). Employees have options and to gain new employment. Employers should invest in seeking to reduce turnover by engaging employees and connecting them to the organization.

Onboarding and Retention

Onboarding is a critical step associated with increased employee retention. The first 45–60 days of employment are crucial. Studies show that employees that do not receive thorough onboarding leave within this timeframe (Llarena, 2013). Organizations must focus time, energy, and effort on employees and the onboarding process to attract, develop, and retain top talent. Employee-centric onboarding programs result in higher retention levels (Namely-HR for Humans, 2018). Furthermore, according to the Wynhurst Group, 58% of employees were more likely to remain with a company at the three-year mark when they engaged in a structured onboarding process (Allen, 2008).

Effective onboarding programs contain elements of cultural integration, organizational socialization, and connection between an individual's strengths and meaningful work. Cultural integration helps the new employee to understand how the organization functions (Bauer, 2010). Additionally, integrating into the culture assists the new employee in learning the written and unwritten norms that underlie the organization's foundation (Caldwell & Peters, 2018). Organizational socialization plays a critical role for the new employee as they move from an outsider to an insider within the organization. Socialization begins during the onboarding process through orientation as new employees meet other newcomers and develop a sense of camaraderie. This process is further instilled in the new

employee as they meet other team members and possibly even a mentor (Bauer & Erdogan, 2011). As the new employee joins their team, they often struggle to find their place. However, if the leader and team seek to understand the new employee's strengths and match them to the appropriate work, the new employee builds confidence (Cable et al., 2013).

Retention Challenges in Information Technology

Although employee turnover is concerning in all industries, it is especially problematic in the Information Technology (IT) industry. The IT Industry was selected for this study as consistently it appears in the top categories for turnover. In 2017, IT had the highest turnover rate for any job sector at 13.2% (Booz, 2018). According to Forrest (2018), more than one out of five software engineers leave their jobs during the first year, representing a 21.7% turnover rate. Accordingly, the present study focuses on turnover in the Information Technology sector as employee turnover is highest within the IT Industry.

Theoretical Framework

Organizational development theory and Kotter's (2012) eight-step organizational change model combine to form the theoretical framework of this study. Organizational development theory increases the knowledge, skills, and abilities of employees within an organization to increase performance and move more readily through change. This theory helps individuals understand the change that is external to them and manage change through transition management, which is their internal mechanism to cope with the change (Austin & Bartunek, 2003). Within organizational development theory, there are two main elements: implementation and change. Implementation focuses on the plan and process to implement the change in an organization. Change will focus on the people aspect of change and include activities such as communication and training to solidify the change. John Kotter's eight-step organizational change model concentrates on the steps to move organizations through change and transition to adopt innovation (Armenakis, 1999). Integrating both models into this study will drive the focus on individual and organizational adaptation to change.

Organizational development (OD) is the process of continuous improvement for an organization. OD begins with examining gaps within an organization, then creating change action plans to address the gaps. Within this process, OD guides the implementation and evaluation of the organizational change plans. At the center of the organizational change plan are employees that must be an intricate part of the change. OD enhances employee's knowledge, skills, and abilities to improve organizational performance and manage future change (Farias & Johnson, 2000). Onboarding is a critical part of organizational development as it serves as the conduit for new employees to engage in organizational assimilation. Participating in effective onboarding increases employees' sense of self-efficacy (Bauer & Erdogan, 2011). Additionally, Kotter's change model influences organizational change.

Dr. Kotter (2012) created his eight-step change model after he dedicated time observing leaders and organizations executing their strategies. This work led to the book *Leading Change* (Kotter, 2012). Within this book, Kotter (2012) laid out eight steps to organizational change. Step one is creating a sense of urgency where change is



presented as a solution to an issue. Step two is forming a powerful coalition where stakeholders will back the change. Step three is creating a vision for change, performing processes differently and more effectively. Step four is communicating the vision. Sharing the vision with the organization is key so all the employees become emotional stakeholders. Step five is removing obstacles. Obstacles can be people or processes; both must move to the new side of the change. Step six is creating short-term wins. Short-term wins are great motivators for those involved in the project and help to remove obstacles. Step seven is building on the change. Organizations should celebrate all wins and create and stretch goals to continue building the change. Finally, step eight is anchoring the change into the culture. Embedding the change into the culture influences the future of the organization (Kotter, 2012). Kotter (2012) cites when an organization's strategy is mismatched with the culture, the organization will struggle. A vital competency for change management is assisting employees to understand the organizational strategy and culture. Onboarding is a key element to set the foundational understanding of strategy and culture. The onboarding phase is the point that employees acclimate to the organization's culture and encourage others to adopt it by modeling the behaviors outside of orientation to the job (Harpelund et al., 2019).

This study applies organizational development and Kotter's (2012) eight-step organizational change model to explore extending onboarding and its long-term effects on engagement and retention. As new employees begin a role with an organization, they experience change. The organization also experiences change when they integrate a new team member into a role. Organizational development theory and Kotter's (2012) eight-step organizational change model connect with engagement and retention by balancing the change that occurs to the organization and the employee's transition experience (Walker-Schmidt, 2021).

Primary Researcher Positionality

The primary researcher has been a practitioner in the human resource space for over 20 years and has been exposed to many areas of specialty in human resources. The researcher has specialized in learning, organizational development (OD), organizational effectiveness (OE), employee relations, life coaching, and recruiting. Within organizational development and effectiveness, a segment of focus is employee engagement and retention. There are many metrics that measure employee engagement and retention. The annual employee engagement survey organizations administer measures overall employee engagement and satisfaction. The primary researcher has designed and implemented engagement surveys for organizations in many industries. Employee engagement surveys are designed by OD/OE practitioners based on alignment with the organizational mission, vision, values, and competencies. In most organizations, a third-party vendor deploys the survey to ensure anonymity to participants who take the survey. Results are tabulated by the vendor and sent to the practitioner within the organization. The practitioner analyzes the results and designs performance interventions for the organization to increase engagement areas of opportunity. If engagement areas of opportunity are not addressed, employee retention is affected. The primary researcher has taken a great interest in the reasons engagement and retention affects an organization.

As previously mentioned, engagement and retention are closely intertwined. Those with lower levels of engagement are less likely to be retained by an organization. OD/OE practitioners are also responsible for creating retention plans for an organization. Often, when engagement areas of opportunity are addressed from the survey, retention increases. The researcher has worked with many organizations that were struggling with engagement and retention. She has developed a reputation for coming into an organization, conducting an engagement needs assessment, designing a plan to increase engagement and retention, and deploying the solution throughout the organization. Many performance interventions have included designing and deploying onboarding and ongoing training programs. As a result, many of the organizations the researcher has worked with over the years have seen a significant rise in engagement and retention.

Conducting engagement surveys and creating retention plans has piqued an interest for the researcher as consistent themes have developed over the years. Caldwell and Peters (2018) cite research on exit interviews that employees leave because of poor onboarding, lack of training, and no career opportunities. The primary researcher has witnessed these themes as well. Specifically, onboarding, the beginning of the organizational journey, seems to be a catalyst for engagement. The researcher has long suspected that extending onboarding can increase long-term engagement and retention. One of the primary objectives of this research is to obtain data to determine if extending onboarding increases long-term engagement and retention. The sample organization is looking at this data to potentially revise their onboarding strategy, thereby transforming the established professional practice of onboarding in the company. As the human resource body of research continues to grow, practitioners, including the primary researcher, are making data-driven decisions to further organizational effectiveness. Furthermore, the primary researcher is incorporating scholarly research to help guide and direct strategic decision making. Conducting this study helps enhance and inform the body of research for human resource professionals pertaining to onboarding. Additionally, the primary researcher utilizes research conducted for this study to enhance the onboarding practices at her current organization and share the results with other organizations struggling with engagement and retention.

Purpose of the Study

The purpose of this quasi-experimental study is to describe the differences in engagement and retention between Associate Software Engineers who were part of the extended onboarding program (EOP) compared to those who were part of the control group. Two research questions guided this study: (a) Is there a difference in annual engagement scores of the extended onboarding group and the control group? (b) Is there a statistically significant difference in retention between the extended onboarding group and the control group?

METHOD

This study presented in this article is the first portion of a convergent mixed methods study. In a convergent mixed methods design, quantitative and qualitative data are collected, compared, and combined to gain a more complete understanding (Creswell & Plano Clark, 2018). We used quantitative methodology to measure

engagement and retention of newly hired Associate Software Engineers. Future publications will report on the qualitative and mixed methods results. We will use the qualitative data to compare to the quantitative results and gain further insight into employees' perceptions using thick, rich descriptions obtained from the interviews. Information on participants, the intervention program, the engagement survey, and data analysis for the quantitative portion of the study are presented herein.

Participants

Associate Software Engineers are recent college graduates or new to the industry with less than a year of experience. The majority earn bachelor's degrees in Computer Science, Engineering, or Computer Programming. All participants are employed in the technology division at a U.S. Fortune 500 financial firm. The extended onboarding program served as the intervention for the Associate Software Engineers, hereafter called EOP participants. All other Associate Software Engineers (non-EOP) served as the control group.

As displayed in Table 1, U.S. Technologists (those who work in all areas of technology) are 74% male and 26% female (Daley, 2020). Within this Fortune 500 technology division, the overall male-to-female ratio is 76% male and 24% female. However, the EOP program had slightly more females (27%), which exceeded the program's gender diversity and inclusion target goal of 25% female.

Table 1. Male to Female Ratio in the U.S., Sample Company, and EOP Participants

Sample	Male	Female
Breakdown of U.S. Technologists	74%	26%
Sample Company Technologists	76%	24%
EOP Participants	73%	27%

Extended Onboarding Program

The extended onboarding program (EOP) allows participants to partake in a nine-month onboarding program. During this time, they engage in an initial two-week boot camp to prepare them for their first days on their team, participate in ongoing technical and soft skills training, work with their designated mentor, and have an assigned life coach who meets with them once a week throughout the nine-month program. Those who do not participate in the EOP do not engage in the opportunities given to EOP participants; instead, non-EOP participants have one week of team-level onboarding. The

EOP began at a single location in September 2017 with the first cohort of three participants. The program expanded to six of the organization's 10 locations throughout the United States. From 2017–2019 EOP participants ($n = 184$) grew from 3% to 78% of the Associate Software Engineers hired per year (see Table 2).

EOP cohorts begin annually in January, March, June, and September. Given that the program focuses on recruiting new college graduates for the Associate Software Engineer position, cohorts begin the month after college graduation. The March cohort is the exception as it serves as a catch-up cohort for those who may have graduated late or had extenuating circumstances preventing them from joining in January. Individuals in the non-EOP are not part of a cohort.

EOP Selection

Those who desire to be part of the EOP cohort must apply and are selected using a comprehensive interview process. Candidates for the Associate Software Engineer position with the EOP apply through the company website and are screened by the recruiter. If knowledge, skills, and abilities for the role match, an interview is scheduled with the recruiter. This interview consists of behavioral interview questions for organizational fit and technical questions. If the candidate does not do well during this interview, they are released from the hiring process. Otherwise, EOP candidates advance to round two interviews. Round two involves a one-hour interview with a team of three employer representatives: a member of the onboarding leadership team, a technical team leader, and a senior engineer. Senior engineers conduct a technical coding exercise as part of the one-hour interview. The recruiter informs the candidate of the committee's decision. If the team decides to extend a job offer, the new hire will work with the technical team leader's group. Candidates who do not advance to the second round of interviews or do not receive a job offer have the option of applying for a non-EOP Associate Software Engineer position. The EOP begins on the first day of employment. EOP participants go through a two-week boot camp to learn the tools and processes to function on a software development team. Program participants continue gaining high levels of training throughout their program, including success skills (soft skills) training and technical training.

The EOP program provides approximately 50 hours of further training opportunities to those in the program. While all Associate Software Engineers do the same type of coding work, EOP participants receive additional technical and skill training and opportunities to work on challenging projects. Therefore, the selection process is more rigorous.

Table 2. Descriptive Statistics for EOP vs. Non-EOP Participants

Starting Year	EOP Group ($N = 184$)		Control (Non-EOP) Group ($N = 261$)		Total n
	n	Year%	N	Year%	
Start in 2017	3	3%	88	97%	91
Start in 2018	31	19%	130	81%	161
Start in 2019	150	78%	43	22%	193
	184		261		445



Data Collection

For this study, collected data included engagement and retention metrics. Data was pulled from the human resource information system (HRIS) on retention metrics for the years 2017–2020 for the job code of Associate Software Engineer. The HRIS contains all business processes and employee data for the organization including hire date, EOP status, and employment termination date. Within the employee termination module, retention numbers are housed. When an employee leaves an organization, an offboarding process is initiated. On the employee’s last day their employment record is updated with a termination date, and any final pay and benefits are calculated and sent.

Instrument

Human Resources data analyses from employee engagement surveys uncover what drives employees to perform their best and areas to help the individuals grow and the organization to evolve. The employee engagement survey measures elements that drive engagement: the overall organization, relationship with the leader and team, and the individual work (McBain, 2007). Furthermore, the survey measures employees’ motivation, and sense of purpose around the elements of organization, team, and leader dynamics. Engagement data was pulled from the Nexus system that deploys, tabulates, and analyzes the annual employee engagement survey for all employees for the years 2017–2019. The Nexus experience is deployed by an organization which is a full-service human capital firm that anchors its survey work in research-based science from industrial-organizational practice. The employee engagement survey uses a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Associate Software Engineers’ engagement scores represented are the overall averages of who participated in the EOP and those who did not. For employees to feel comfortable expressing how they feel about the organization, only aggregated group scores were released to the researchers.

Data Analysis

The mean overall engagement scores were pulled from the employee engagement system for the years of 2017–2019 for the EOP group and the non-EOP group. The organization was not able to provide standard deviation measures or mean scores for any subscales. An inferential chi-square test of independence was conducted using the statistical software package SPSS 26 with two

categorical variables: Each participant was coded by group membership (EOP = 0, non-EOP = 1) and retention (Yes = 0, No = 1). The chi-square test of independence is appropriate to determine if two categorical variables are related and can be used to predict the value of one variable if the other variable is known (Field, 2018; Vogt & Johnson, 2016). The phi coefficient (ϕ) is reported as a measure of effect size for two dichotomous variables (Vogt & Johnson, 2016).

RESULTS

Results from quantitative methods are presented to answer the research questions. First, descriptive statistics on employee engagement is provided. Second, the results of the inferential test is provided.

Employee Engagement

Average employee engagement scores for the EOP and the non-EOP group are presented by year in Table 3. The mean engagement score for the EOP group is slightly lower than the control group. This mean difference between the annual engagement scores is less than 5%. Without access to variance in scores, it cannot be determined if there is a statistical difference between groups on perceived employee engagement.

Table 3. Mean Employee Engagement Scores by Year for EOP and non-EOP Groups

Year	EOP		Non-EOP	
	M	n	M	n
2017	4.10	3	4.14	88
2018	4.15	31	4.18	130
2019	4.15	150	4.20	43
Total		184		261

Retention

Descriptive statistics for retention are presented in Table 4. From 2017 to 2019, the retention rates for the EOP group outperformed the control group. Although the sample sizes between the groups vary by year, the EOP group retains 10% to 43% more of participants than the non-EOP control group. In 2019, a shift occurred where more Associate Software Engineers elected to join the EOP group compared to the Non-EOP group.

Table 4. Descriptive Retention Statistics for EOP vs. Non-EOP Participants

Year	EOP Group			Control (Non-EOP)		
	Annual	Retained	Retained	Annual	Retained	Retained
	n	n	%	n	n	%
2017	3	3	100%	88	79	90%
2018	31	31	100%	130	116	89%
2019	150	135	90%	43	20	47%
Total	184	169	92%	261	215	82%

Next, retention was examined between extended onboarding participants and the control group. A chi-square test examined if there was a significant relationship between extending onboarding and retention. The results showed a statistically significant relationship between the two categorical variables - extended-onboarding and control groups, $\chi^2(1) = 8.19, p = .004$. The effect size ($\phi = .14$) indicates a small effect. In order to determine if the shift to EOP group selection in 2019 accounted for the significance, a second chi-square test conducted using only the 2017-2018 participants ($N = 252$) also demonstrated statistical significance, $\chi^2(1) = 3.947, p = .047$ and a small effect ($\phi = .13$).

DISCUSSION

Based on the effect size, there is a small statistically significant effect between the onboarding group and retention. Although reported engagement was slightly lower for the EOP group, we cannot verify if this was a statistically significant difference as only summary statistics were provided by the employer. Accordingly, further research related to measuring engagement and retention metrics is warranted as this study indicated that EOP participants are more likely to stay with the company in spite of lower reported engagement scores than the non-EOP participants. As stated previously, this study is part of an emerging dissertation.

Current literature indicates that engagement and retention are influenced by several factors, primarily the individual's lived experiences. These lived experiences can vary based on organizational culture, leadership style, growth opportunities, and career progression (Bauer & Erdogan, 2011; MacIntosh & Doherty, 2010). Additionally, these factors can influence how an individual engages within an organization and whether they stay with the organization. Reasons for engagement are highly personal to each individual and will also be explored with the qualitative data collection in this emerging mixed methods study. Future research will engage a convergent mixed methods design. Qualitative data will include individual interviews with each EOP participant and focus groups by cohort. Primary questions in the qualitative study will examine what factors kept the participants most engaged and encouraged retention with the organization. The remaining components of the mixed methods study will enhance the current information and provide a holistic picture for engagement and retention.

Organizations that demonstrate high levels of employee engagement and retention show stronger financial and productivity gains (Morgan, 2004). The most recent research shows companies that invest more in relationships and training during onboarding, rather than red tape and paperwork, have a powerful commitment from their employee base (Hallak, 2016; Smither, 2003). Most companies state they do not have the time to extend the onboarding process past two weeks to thirty days (Hallak, 2016). However, the skyrocketing costs of turnover to organizations are staggering. Recruiting costs can range from \$20,000–\$50,000 to bring in an Associate Software Engineer (SHRM, 2016). Implementing simple retention strategies could significantly impact the bottom line for many organizations. Keeping top talent can impact whether a company maintains its competitive advantage or loses out to other companies (Cardy & Lengnick-Hall, 2011). Not only can retention affect the financial bottom line, but also the retention of institutional knowledge (Ma et al., 2018). When a high performer leaves the organization, there is not only a replacement cost but also a cost of the knowledge that left with them. In the time that follows to recruit,

hire, train, and develop their replacement, there will be a productivity cost associated with the initial employee loss (Kim, 2019).

Limitations

This study has notable limitations. First, this study does not include participants in other job codes besides Associate Software Engineer. Therefore, this study is not compatible with random sampling where all members have an equal opportunity to be represented in the sample. Second, this study may not have transferable results to other industries. As previously stated, technology has high rates of turnover; the results of this study may vary according to industry. Third, individual engagement data could not be obtained to compute variance, investigate if statistical differences exist between engagement scores, or to see which subscales of engagement differ. Additionally, the engagement instrument does not cite specific information on validity and reliability. Fourth, by selecting to only look at onboarding effects on engagement and retention, a boundary has been set only to discuss those criteria. Many other elements can be affected by extending onboarding as research suggests that engagement is highly personal (Caldwell & Peters, 2018). Fifth, those who apply to participate in the EOP are driven individuals who are excited about the additional training and challenge of the program. Therefore, these individuals may have innate characteristics that influenced their engagement and retention in addition to or rather than the impact of the EOP. Finally, the absence of qualitative data to provide depth and insight on the topic is a limitation that will be mitigated with the upcoming convergent mixed methods research that incorporates these findings.

Recommendations for Future Research

Future research could examine engagement more broadly or other elements that onboarding may impact. As previously mentioned, engagement is a highly personalized experience. The topic of engagement and what creates the emotional connectedness for individuals with an organization needs further research in the human resource field. Furthermore, this study could be replicated in other positions at multiple levels beyond Associate Software Engineers or in other industries to examine if similar results occur. Lastly, this study could be extended to a longitudinal study to see far-reaching effects on extending onboarding on career projection and long-term engagement.

Conclusion

The research demonstrates that onboarding is the foundation for long-term engagement and retention. Organizations know that ineffective onboarding is a problem, but there is no definitive solution in the evidence. Engagement and retention are two target metrics for most organizations. Turnover causes a huge loss of revenue on recruitment and hiring. Clearly, turnover is an issue, is effective onboarding the answer? Engagement and retention are influenced by many factors, primarily an individual's experiences within an organization. The research demonstrates that effective onboarding is associated with long-term engagement and retention. Organizations that create an emotional connection with their employees early in the process are more likely to have higher levels of overall engagement and retention. Ultimately, this emotional bond impacts their productivity, and new employees will reach production efficiency



quickly (Martin, 2018). Organizations realize that enhancing employee engagement and retention have an impact on the company's overall financials. Specifically, engagement affects retention and links directly to customer satisfaction and stakeholder value. Retaining top talent and keeping them engaged not only can impact the financial bottom line but also retain institutional knowledge. Engagement and retention of talent remain one of the most critical factors to an organization's success. Extending onboarding can be a key element in an employee's individual experiences in selecting to grow and stay with an organization.

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