

CAREER ANCHORS & INFORMATION TECHNOLOGY APPRENTICESHIPS: DEVELOPING & RETAINING IT PIPELINES

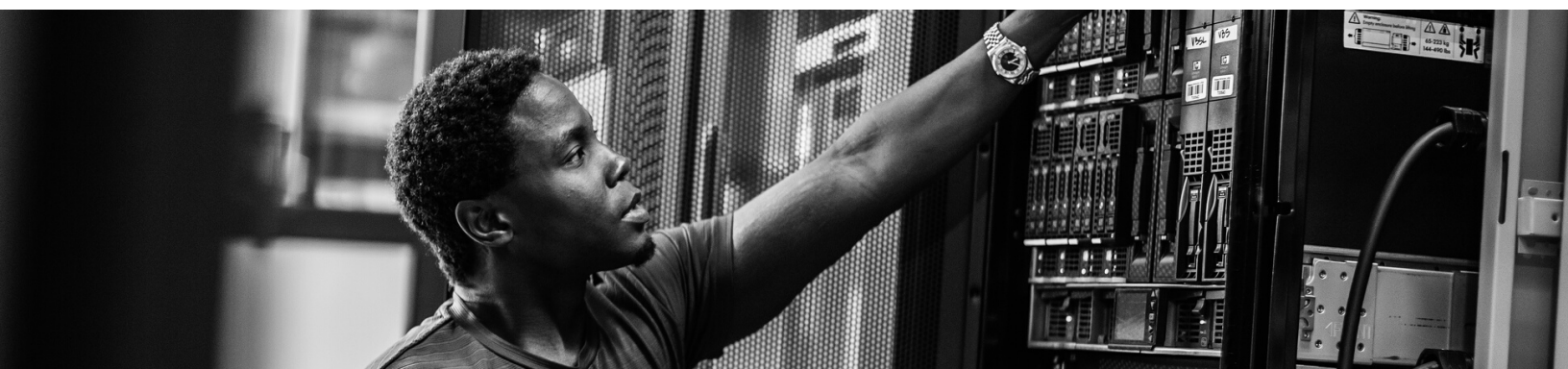
A Capstone Paper in fulfillment of the requirements for the degree of Doctor of Education in Leadership and Learning in Organizations at the Peabody College of Vanderbilt University in Nashville, Tennessee, USA.



Emily K. Myers & Kevin M. Stamps

TABLE OF CONTENTS

- 03** Executive Summary
- 05** Partner Organizations
- 06** Area of Inquiry
- 07** The Evidence Base
- 20** Project Questions
- 22** Data Collection Plans & Tools
- 24** Data Analysis & Findings
- 28** Limitations
- 29** Recommendations
- 32** Conclusion
- 33** References
- 36** Appendices



EXECUTIVE SUMMARY

BACKGROUND:

The Cincinnati USA Regional Chamber and their Apprenti program strive to assist organizations in the Cincinnati Region to close their talent gaps, specifically in the field of technology. One method of achieving this goal is registered technology apprenticeships. Total Quality Logistics (TQL) has invested in this initiative further by formalizing an incumbent worker program in partnership with Apprenti Cincinnati. The Chamber believes upskilling workers is an effective method of developing a workforce internally and is prepared to assist other organizations in executing the model created with TQL. Finding willing participants, however, is problematic. The Chamber desires more participation from other member organizations. It is unclear why this program has not seen the traction the Chamber desires, especially considering the success of the TQL model. By not engaging in the development of an internal workforce, organizations risk continuing to experience the fallout of an extreme shortage of technology workers.

TQL requires access to a larger pool of technology professionals to recruit talent. Their growth is occurring at a rapid and unsustainable rate as it pertains to available labor. Filling this need will require automation, which will increase the need for additional technology staff. There is also a mismatch between desired experience and the experience available within the candidate pool currently in the Greater Cincinnati Area.

This capstone project aims to determine the effectiveness of an internally sponsored, cohort-based apprenticeship program and its effects on IT talent pipelines within an organization.

PROJECT QUESTIONS AND FINDINGS:

What is the impact of an internally sponsored, cohort-based, apprenticeship program on the development of IT talent pipelines within TQL?

Most respondents to the employee satisfaction survey (n=29) have been employed with TQL for three years or less. Other respondents ranged up through the ten-to-fifteen-year mark, with none exceeding fifteen years. Seven survey respondents participated in the Apprenti program. Only one of the seven did not agree that the reduced compensation received during the apprenticeship was a reasonable



tradeoff for the TQL Apprenti program benefits. All the TQL Apprenti Program participants indicated they are either extremely likely or moderately likely to continue working with their current employer (TQL) when their term as an apprentice is complete. These findings indicate that the Apprenti program is successfully creating a pipeline of IT professionals within TQL that will gain necessary skills and continue to engage with the organization even within the constraints of the Apprenti program.

What is the impact of an internally sponsored, cohort-based, apprenticeship program on the retention of IT staff within TQL?

Overall, survey participants indicate they are generally satisfied with their work situation at TQL. Questions related to interest in their work, ability to apply their associated skills, and relationships with their managers were overwhelmingly positive. Most respondents reported they are extremely satisfied or moderately satisfied with these indicators. There begins to be some deviation from this trend with questions related to current workload, opportunities for progression, and physical work environment. The most significant concern is related to physical work environment with 22.23% of individuals either moderately dissatisfied or neither satisfied nor dissatisfied.

How do self-assessed career anchors, as defined by Schein, differ between participants in the TQL Apprenti program and traditional IT professionals at TQL?

In aggregate, the top career anchor was Lifestyle, with factors such as work-life balance indicated as crucial elements to career satisfaction. However, when the data was broken down to Apprenti vs. Non-Apprenti participants, Apprenti participants identified Security and Stability as their primary anchor. Furthermore, all respondents in the Apprenti program had a tenure of fewer than five years.

When the data is disaggregated by tenure alone, the career anchors broke out as Lifestyle for those with 0-3 years of tenure, Security and Stability for those with 3-5 and 5-10 years of tenure, and Lifestyle for those with 10-15 years of tenure.


RECOMMENDATIONS

- Measure and track Apprenti participant career anchors.
- Consider retention strategies based on career anchors.

PARTNER ORGANIZATIONS




The Cincinnati USA Regional Chamber serves nearly 4,000 members and is focused on expanding the region's talent base by harnessing the power of Cincinnati's unique offerings. One platform used by the Chamber to reach this goal in the technology industry is the Apprenti Cincinnati program. This program is designed to create alternative pathways to access diverse tech talent and helps organizations address technology skill shortages through the time-tested model of apprenticeship.



An additional partner in this endeavor is Total Quality Logistics (TQL). TQL is a freight brokerage firm founded in Cincinnati, Ohio in 1997. TQL employs over 8,000 people and operates in 26 states nationwide. While TQL's primary focus is freight, they also utilize an extensive technology department focused on customer support, internal IT processes, and software development and maintenance. TQL works directly with the Chamber to develop cohorts of internal employees to participate in the Apprenti Cincinnati program.

AREA OF INQUIRY



The purpose of this capstone project is to determine the effectiveness of an internally sponsored, cohort-based, apprenticeship program and its effects on IT talent pipelines within Total Quality Logistics.

The Cincinnati USA Regional Chamber and Apprenti strive to assist organizations in the Cincinnati Region in closing their talent gaps, specifically in the field of technology. One method of achieving this goal is registered technology apprenticeships. TQL has invested in this initiative further by formalizing an incumbent worker program in partnership with Apprenti Cincinnati. The Chamber believes upskilling workers is an effective method of developing a technology workforce grown from within the company itself and is prepared to assist other organization to execute the model created with TQL. Finding willing participants, however, is problematic. The Chamber desires more participation

from other member organizations. It is unclear, at this time, why this program has not found the traction the Chamber desires, especially considering the success of the TQL model.

TQL requires access to a larger pool of technology professionals from which to recruit talent. Their growth is occurring at a rapid and unsustainable rate relative to available labor. Filling this need will require automation which in turn will require additional technology staff. There is also a mismatch between desired experience and the experience available within the candidate pool currently in the Greater Cincinnati Region. Continued deficits in this area will stymie growth and innovation throughout the organization.



THE EVIDENCE BASE: TECHNOLOGY TALENT DEFICITS

WHAT IS THE CURRENT STATE OF TECHNOLOGY TALENT DEFICITS?

The current talent pipeline for IT professionals is insufficient to meet the needs of the industry. A major gap was observed between public interest and for-profit recruitment and retention models with for-profit being seen as the superior model (Ford Foundation, 2015).

Retention of top talent has proven difficult as IT professionals must seek constant training to stay abreast of rapid technological changes, and some companies are not keeping pace. Furthermore, wage inflation and the current economic climate has made a constricted labor market even tighter (Ertürk, & Vurgun, 2015).

The Cincinnati USA Regional Chamber recognizes the need for top-tier IT talent in the region and has created an apprenticeship program to address the deficit. However, Cincinnati's struggles mirror the nation's as the pipeline of talent cannot meet the demand of the region.

WHY CHOOSE AN APPRENTICESHIP PROGRAM?

EMPLOYEE PERSPECTIVE

Apprentices are beneficiaries of the cost and time savings reaped from earning industry credentials, or even a degree, without the formality of college (Lerman, n.d.). Additionally, unlike internships which are often unpaid, apprentices often receive compensation while completing their apprenticeship responsibilities.

BUSINESS CASE

Businesses that leverage apprenticeships to develop workers with customized skills have higher rates of retention, and produce a positive ROI (The Bottom Line: Apprenticeships Are Good for Business, 2014). Businesses often partner with government entities to secure apprentices. As outlined in a Consumer Technology Association white paper (n.d.), apprenticeship programs are often facilitated through government partnerships and grants alleviating some tax and cost burden for the organization. The business case goes further in that research suggests apprenticeships, particularly IT apprenticeships, are a great vehicle for targeting specific minoritized groups outside the traditional field of IT (Taylor, 2017).

COMMUNITY IMPACT

Lastly, the community in which the apprenticeship takes place often benefits from the program. According to a study in partnership with Case Western University (2016), apprenticeships allow for industry-driven and highly flexible solutions to meet the workforce needs both locally and nationally. Workforce development is a primary concern for communities, and more municipalities are seeking creative ways to go about developing their labor pool. A 2021 Forbes article outlines several benefits to communities that use apprenticeships for technology positions including higher paying jobs and deepening ties between communities and tech organizations (Reiss, 2021). It behooves both communities and businesses to employ these programs to their mutual advantage.



WHAT MAKES AN APPRENTICE PROGRAM EFFECTIVE?

Research indicates apprenticeships are most effective when they allow for various types of learning experiences and the creation of new, field specific identities (Greeno & Gresalfi, 2008; Hand & Gresalfi, 2015).





APPRENTICESHIP & IDENTITY

Apprenticeship training and learning models have been used to teach various trades throughout history and across the globe (Lave & Wenger, 1991). Methods for employing apprenticeship models to effectively train individuals is the topic of a large body of educational literature. Lave and Wenger (1991), for example, emphasize the importance of legitimate peripheral participation for apprentices to gain the most skill efficacy during the term of learning. The authors define legitimate peripheral participation as the situated activities learners encounter that allow them to participate within the community of practice (Lave & Wenger, 1991). These interactions and learning opportunities allow novices to make the shift from newcomers in a community to old-timers (Lave & Wenger, 1991). They continued by citing various scenarios to include midwives, tailors, quartermasters, butchers, and even alcoholics to illustrate precisely how various types and levels of legitimate peripheral participation models

lead to the success or failure of the apprenticeship engagement (Lave & Wenger, 1991). Essentially, Lave and Wenger (1991) suggest the more authentic the participation, the more effective the learning opportunity will be in allowing apprentices to become full practitioners of their chosen profession.

Greeno and Gresalfi (2008) extend Lave and Wenger's (1991) work on legitimate peripheral participation and focus on the importance of the development of learner identities throughout apprenticeship community opportunities and interactions. They contended true learning occurs when learners' participation in work/apprenticeship related activities begins to mirror more closely that of the seasoned old-timers (Greeno & Gresalfi, 2008). Thus, the trajectory of an individual's learning must be cogitated by considering the way they interact with the specific practices of the professional community as they move across the spectrum from peripheral

participation to a more central role (Greeno & Gresalfi, 2008).

Greeno and Gresalfi (2008) proposed an extension of legitimate peripheral participation in which newcomers make “meaningful and...tangible contributions to the community’s functions” (p. 172). This implies apprenticeship activities should be scaffolded to effectively integrate real-world implications into objectives. The authors (Greeno & Gresalfi, 2008) refer to this scaffolding as “affordances.” As an apprentice’s skills increase, their participation is expanded to allow for new learning opportunities and supports are gradually released. In tandem, their identity as a member of the trade is shifting from newcomer to old-timer as they become more familiar with their trade community and practices (Greeno & Gresalfi, 2008).

Furthering the idea of identity in apprenticeship models, Hand and Gresalfi (2015) explore identity in relation to learning from a situative perspective. Building on literature developed by Lave, Wenger, and Greeno, they suggest the creation of learner identity is a joint accomplishment between participation and defined activity (Hand & Gresalfi, 2015). This is particularly relevant to apprenticeship style learning because learners must take on the identity of the trade in order to become effective in learning the necessary skills of the craft and competently representing themselves as a tradesperson.

In Sfard’s (1998) exploration of effective learning, she presents two metaphors that also apply to an apprenticeship model, the participation metaphor and the acquisition metaphor. The participation metaphor indicates that learning as participation is an important aspect of overall interaction with content, especially when considering models (Sfard, 1998). The acquisition metaphor is a more common view of learning as it relates to the development of concepts and acquisition of knowledge (Sfard, 1998). Apprenticeship models should use the participation metaphor whenever possible, though knowledge acquisition is important. The two used in concert will likely lead to the most effective learning scenarios (Sfard, 1998).



A CASE STUDY

A recent explosion of growth in San Francisco's technology (tech) sector fueled an acute demand for local talent. Anchored by industry heavyweights like Jawbone, Twitter, Salesforce, and ZenDesk, the tech sector produced, at accelerating speeds, an array of breakthrough industries—from social media, to cloud-based applications, to Lifestyle products. To address these challenges, the San Francisco Office of Economic and Workforce Development (OEWD) won a competitive grant award from the U.S. Department of Labor (DOL) Workforce Innovation Fund to implement the TechSF Workforce Innovation Partnership (Heber, et al., 2015). The project was designed to develop new and more robust public-private partnerships and deploy agile change management processes to catalyze innovative, industry-based solutions to workforce development challenges, to meet rapidly evolving needs of employers and job seekers (Heber, et al., 2015).

WHAT WENT WELL

- Employers' participation in project-based training and education had a direct benefit on students participating in project-based learning courses (Heber, et al., 2015).
- Leveraging the interests and resources of a diverse group of thinkers working toward change in the workforce system was viewed as a valuable opportunity and successful on a small scale (Heber, et al., 2015).
- Over 80% of workshop participants perceived that participating in the career management workshops improved their ability to communicate during an interview, identify job leads through their professional network, create a resume/portfolio that effectively communicated their skills, and/or start their own business (Heber, et al., 2015).

LESSONS LEARNED

- There was a positive and significant association between the number of career workshops technical training participants attended and their likelihood of finding a new job (Heber, et al., 2015).
- Innovation and change within the workforce development system requires incremental steps, time, testing, and the willingness to accept both successes and failures in order to run with ideas (Heber, et al., 2015).
- Applying industry practices to seed innovation and change also requires being prepared to partner with practitioners in the field, both for implementation and feedback (Heber, et al., 2015).



RECOMMENDATIONS FOR OTHERS (HEBER, ET AL., 2015)

1. Build apprenticeship programs that capitalize on diversity of thought.
2. Develop career management workshops as part of the apprenticeship experience.
3. Accept the fact that failures will occur along the way with the assurance that incremental steps lead to idea creation.
4. Apprenticeships should join with industry partners to learn best practices, develop partnerships, receive feedback, and create placements for apprentices.

CAREER ANCHOR THEORY

Career Anchor Theory, developed and revised by Schein from 1978-1993 and based on a longitudinal study of MBA graduates, suggests there are eight career anchor categories with which individuals align. These categories include Technical-Functional Competence, General Managerial Competence, Autonomy-Independence, Security-Stability, Entrepreneurial Creativity, Service-Dedication to a Cause, Pure Challenge, and Lifestyle (Schein, 1993). While individuals may identify in some capacity with each of the anchors, Schein (1993) suggests a dominant anchor will rise to the surface and define the career of every individual.

TECHNICAL-FUNCTIONAL

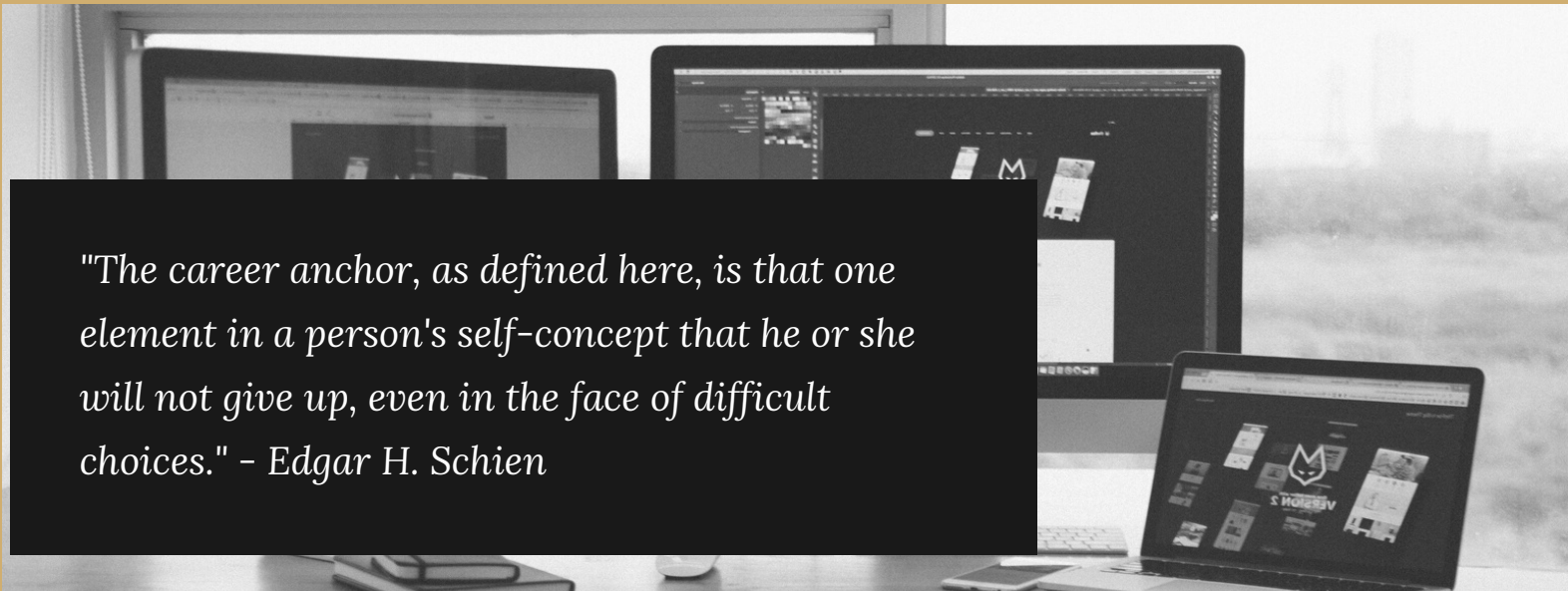
Technical-Functional Competence consists of a career focused on specialization in a particular field

(Schein, 1993). Individuals anchored in this category thrive in environments that allow them to participate in goal setting and then operate autonomously in their area of expertise (Schein, 1993). They are also not necessarily attuned to managerial tasks and positions. They may tolerate these positions only if they see value in the way it effects the technical applications of the work (Schein, 1993). Technically and functionally competent individuals seek to be compensated based on their skill level and abilities and prefer to be recognized for their expertise by peers within their industry that can fully appreciate their prowess rather than by managers that lack the same technical proficiencies (Schein, 1993).

GENERAL MANAGERIAL COMPETENCE

The next domain, General Managerial Competence, consists of individuals that view specialization as a trap rather than a virtue (Schein, 1993). These individuals are drawn to management areas and seek to understand the way various functional systems operate while retaining some expertise in a dominant area (Schein, 1993). They excel at eliciting necessary information and encouraging collaboration among members of the team (Schein, 1993).





"The career anchor, as defined here, is that one element in a person's self-concept that he or she will not give up, even in the face of difficult choices." – Edgar H. Schien

Individuals anchored in this category strive for high levels of responsibility and opportunities to lead and make tangible impacts on the overall organizational operations, and be paid accordingly (Schein, 1993). They are motivated by promotional opportunities based on merit and seek recognition through this promotional activity. Monetary recognition is also highly appealing to this group (Schein, 1993).

AUTONOMY-INDEPENDENCE

Those anchored in Autonomy-Independence struggle with rules, procedures, and norms of the general workplace and have an overarching desire to blaze their own trail and create their own processes and routines (Schein, 1993). They prefer work assignments that have clearly defined goals and outcomes but leave the process open to interpretation. Individuals in this anchor category respond to immediate payouts for their

accomplishments and prefer promotions that increase their freedom to act as they see fit to address the challenges presented (Schein, 1993). Medals, certificates, and awards are highly motivating as well. Wils et al. (2014) disagree with this categorization, instead distinguishing between autonomy as a way of doing work while independence is freedom to act as one sees fit. As a result, the authors suggest this domain is actually comprised of two fundamentally different concepts and should be separated (Wils et al., 2014).

SECURITY-STABILITY

The Security-Stability domain thrives on predictability. Workers in this category often search for jobs that offer tenure, have good retirement and health benefits, and generally welcome the "golden handcuffs" some jobs have to offer (Schein, 1993). Due to these tendencies, individuals in this domain

can be labeled as lacking in ambition, whether this is accurate or not is highly dependent on the individual (Schein, 1993). The Security-Stability domain prefers seniority based promotional systems and flourishes in an environment that rewards loyalty and steady, predictable performance (Schein, 1993).

ENTREPRENEURIAL-CREATIVITY

Schein (1993) describes the Entrepreneurial-Creativity domain as comprised of individuals with an overwhelming need to create novel products, business, and processes. Workers in this category may not stay in traditional businesses for extended periods of time and tend to succumb to boredom easily (Schein, 1993). Entrepreneurial and creatively minded people strive for ownership rather than more traditional pay structures and seek promotional positions that allow for more creativity. They also seek high-profile praise and visibility (Schein, 1993). Wils and colleagues (2014) also disagree with the categorization of Entrepreneurial-Creativity as one group. Rather, these authors suggest the anchor should be split in two to accommodate the differences in individuals with an entrepreneurial or bureaucratic spirit from those that seek to create in a more protean nature (Wils et al., 2014).

SENSE OF SERVICE-DEDICATION TO A CAUSE

The next domain is Sense of Service-Dedication to a Cause. In this domain, people choose careers based on a desire to effect change or help others (Schein, 1993). These individuals seek work that espouses their values and desire compensation commiserate with their contributions to the organization (Schein, 1993). Service-anchored individuals seek recognition and support from their peers as well as their superiors and desire opportunities to have their values presented to upper-level management. When this support is not available, they will exit the organization (Schein, 1993).





PURE CHALLENGE

Pure Challenge anchored workers define success through solving problems, overcoming obstacles, and besting a particularly savvy opponent or personal best (Schein, 1993). With this anchor, pay, recognition, and promotion preferences are centered purely on opportunities for the individual to continually test their skills. Competition is central to motivation and continued engagement with the organization (Schein, 1993).

LIFESTYLE

The Lifestyle anchor addresses employees that are not only career minded, but also insist that this career support and integrate with the particular Lifestyle they choose to lead

(Schein, 1993). They seek out organizations that respect family and personal concerns which forces managers of individuals with this anchor to seek to understand the specific needs of the employee and adapt structures and policies when possible (Schein, 1993).

While Career Anchor Theory is widely accepted, some theorists feel it does not do enough to fully explain the way individuals interact with their organization and work functions. Schein (1993) also suggests workers fit only in one of these domains. As mentioned, other theorists, such as Wils (2014) and his colleagues suggest alternative views to this aspect of the theory.

MORE ON CAREER ANCHORS

Determinants of IT career choices are the subject of ongoing research. According to El-Masri et al. (2018), extant research in information systems relies heavily on Career Anchor Theory as a lens to examine occupational choices and outcomes in information technology. Yet, the empirical results are inconclusive (El-Masri et al., 2018). Other individualized factors must be considered to include self-efficacy approaches. While career choices are beyond the scope of this analysis, El-Masri et al.'s (2018) research may give insight into why certain IT professionals stay in their chosen career field or choose to exit. Combining Career Anchor Theory with Social Cognitive Career Theory, El-Masri and company were able to predict IT career choices with 83.3% accuracy (2018). However, one of the major shortcomings of this study was the lack of discussion around career satisfaction.

Work engagement and job commitment are two important areas of study in the field of organizational psychology and human resources management. Work engagement is generally defined as a positive, fulfilling and energizing state of mind that is characterized by high levels of absorption, involvement and enjoyment in one's work. Job commitment, on the other hand, is the emotional attachment and identification an employee has towards their organization.

Research in this area often focuses on identifying the factors that influence work engagement and job commitment, such as job design, leadership, organizational culture, and individual differences. Additionally, research also focuses on the outcomes of work engagement and job commitment, such as job satisfaction, organizational citizenship behavior, and turnover intention. The main idea behind the research on work engagement and job commitment is to understand how these factors and outcomes can be influenced to improve the overall well-being and performance of employees and organizations.

Coetzee et al. designed a study in 2014 to assess whether individuals' career anchors (measured by the Career Orientations Inventory) significantly moderate the relationship between their work engagement (measured by the Utrecht Work Engagement Scale) and job commitment (measured by the Organization-Related Commitment Scale) (2014). Coetzee et al. (2014) employed a cross-sectional quantitative survey approach. A non-probability, purposive sample of adults (N = 318) employed in a human resource capacity in the South African service industry participated in the study (Coetzee et al., 2014). Stepwise hierarchical moderated regression analysis was performed to achieve the



objective of the study (Coetzee et al., 2014). The results showed that the work engagement–job commitment relationship was generally stronger for high career anchor preferences than for low career anchor preferences. This research supports the notion that the extent to which employees experience congruence between their career anchors and their working environments, and the nature of their jobs, will determine the level to which they feel energized, dedicated and absorbed in their jobs. This in turn will influence their attachment and commitment to their jobs in the organization (Coetzee et al., 2014).

There is some research (El-Masri et al., 2018) that suggests a correlation between an individual's career anchor and their career satisfaction. If an individual's career choices align with their career anchor, they may experience greater career satisfaction. Conversely, if an individual's career choices do not align with their career anchor, they may experience less career satisfaction. For example, an individual whose career anchor is

autonomy may experience greater career satisfaction in a role that allows them to work independently and make their own decisions, such as being an entrepreneur or a freelancer. On the other hand, an individual whose career anchor is Security–Stability may experience greater career satisfaction in a role that provides job security and a steady income, such as being a government employee or a tenured professor.

Jiang and Klein (1999) attempted to study the impact of career anchors and career satisfaction of entry-level information systems professionals. Their findings suggest supervisor involvement with junior employees plays a crucial role in satisfaction. Many studies indicate the importance of the mentor relationship to entry-level employees' career success, as this relationship performs both career and psychosocial functions (Jiang & Klein, 1999). Jiang and Klein (1999) found the primary psychosocial function is role modeling, which occurs when the mentor displays behavior for the protege to

emulate. Other psychosocial functions include acceptance, counseling, and friendship.

While Jiang and Klein's (1999) research made a case for supervisor mentorship, Meldrum (2021) makes a case for group coaching of IT professionals. The collective career coaching model, which has been adapted from the Group Integrative Narrative Approach, was developed by Meldrum (2021) over a number of years based on observations,

research, reflections and practice made initially as a guidance practitioner, and later as an educator and researcher, in the field of career guidance and development (Meldrum, 2021).

Traditionally, there has been a predominant focus on factors which affect career development at the individual level such as values, interests and education and matching these factors to particular job or industrial roles or fields. The group approach is psycho-educational in delivery style (Corey, 1981) which differs from both group counseling (which is unstructured and involves little pre-prepared planning) and traditional classroom or lecture style teaching (which is more structured).

Psycho-educational groups are instead semi-structured, involve some planning before the group work takes place, and have specific, but fluid goals (Meldrum, 2021). This approach has possible implications for cohorts which naturally lend themselves to group coaching. Furthermore, the Apprenti model is already structured and could possibly integrate the group coaching methodology organically.



PROJECT QUESTIONS

THE FOLLOWING QUESTIONS GUIDED THE CAPSTONE PROJECT:

01

What is the impact of an internally sponsored, cohort-based, apprenticeship program on the development of IT talent pipelines within TQL?

02

What is the impact of an internally sponsored, cohort-based, apprenticeship program on the retention of IT staff within TQL?

03

How do self-assessed career anchors, as defined by Schein, differ between participants in the TQL Apprenti program and traditional IT professionals at TQL?



CAREER ANCHOR THEORY IN PRACTICE

Career Anchor Theory guided our recommendations to TQL for methods of retention for their Apprenti and general IT professionals. We sought to determine what commonalities or differences exist between Apprenti participants and those that are not actively participating in the Apprenti program.



DATA COLLECTION PLAN & TOOLS

Question	Data	Tool/Instrument Approach	Analysis Plan
What is the impact of an internally sponsored, cohort-based, apprenticeship program on the development of IT talent pipelines within TQL?	<p>Employee satisfaction survey</p> <p>Worked with partner to define “impact” as it relates to their program goals</p>	Employee satisfaction survey	<p>Exploratory Data Analysis</p> <p>Comparative Analysis</p> <p>Descriptive Statistics</p>
What is the impact of an internally sponsored, cohort-based, apprenticeship program on the retention of IT staff within TQL?	Employee satisfaction survey	Employee satisfaction survey	<p>Exploratory Data Analysis</p> <p>Comparative Analysis</p> <p>Descriptive Statistics</p>
How do self-assessed career anchors, as defined by Schein, differ between participants in the TQL Apprenti program and traditional IT professionals at TQL?	Career Anchor survey for Apprenti participants and current IT employees	Career Anchor Survey	<p>Exploratory Data Analysis</p> <p>Comparative Analysis</p> <p>Descriptive Statistics</p>

DATA COLLECTION

The data collected centered on two surveys. The first was a twelve-question employee satisfaction instrument (Appendix A). This survey had a total of 39 respondents with seven reporting they were or are currently participants in the TQL Apprenti Program. The second instrument was structured to mirror the fourth edition of the Career Anchors Self-Assessment designed by Schein and Van Maanen (2013) (Appendix B). This survey totaled 33 respondents with six members of the TQL Apprenti Program. However, seven respondents did not finish the assessment and were excluded from the data, leaving 26 respondents of which four were Apprenti participants.

The data collection aligned with our plans and was a successful campaign

with 36% of Apprenti participants responding to at least one survey. Of the overall TQL IT community, 7% responded to at least one survey. While we originally intended to use other organizational data related to TQL IT employees, that data was rendered unnecessary to answer our questions. The surveys provided all necessary demographic and historical data.

We faced initial challenges with obtaining a reasonable number of survey participants. By partnering with our TQL organizational contact, we were able to initially disseminate the survey at an IT department meeting. Our contact sent the survey email two additional times - once targeting Apprenti participants directly, and once targeting the entire IT department. With each reminder, we saw an increase in participants for each survey instrument.

Another challenge was the lack of participation from TQL Apprenti Program participants, especially since this was the target group. The Apprenti participant group accounts for less than a third of the collected data, which may make comparisons difficult. The relatively low number of respondents from the target group may affect our ability to answer our project questions effectively.



DATA ANALYSIS

Exploratory data analysis (EDA) of the surveys was relatively straightforward. We stratified the data by tenure and Apprenti participation. Once the data was deconstructed into constituent parts, we evaluated what career anchors corresponded to each tranche.

For the employee satisfaction survey, we started with aggregated findings and analyzed the tenure information as established in six tranches: Apprenti program participation (current or former), a question formulated to measure sentiment around compensation during the Apprenti program as requested by TQL, and seven standardized work sentiment inquires chosen from a standard bank (see Appendix A). We binned and counted tenure and Apprenti participation data while the sentiment questions were arithmetically averaged to arrive at a sentiment score on a Likert scale. We calculated in both the whole as well as delineated by Apprenti participation.

We analyzed the career anchor findings in a similar fashion as the employee satisfaction data. Guided by Schein's normed instrument, we appended identical demographic questions concerning tenure and Apprenti participation and, like the employee satisfaction survey, binned and counted. Schein's instrument links certain question sets to certain career anchors. Based on participant responses highest scores to those questions on a 4-point Likert scale, a career anchor is assigned. As in the previous survey, we used both aggregated and disaggregated scores based on Apprenti participation. Taken as a collective sum, we ranked each anchor based on raw score for both Apprenti and non-Apprenti participants. We also ranked the standard eight career anchors based on number of participants assigned to each anchor.





FINDINGS

EMPLOYEE SATISFACTION SURVEY

QUESTION 1: WHAT IS THE IMPACT OF AN INTERNALLY SPONSORED, COHORT-BASED, APPRENTICESHIP PROGRAM ON THE DEVELOPMENT OF IT PIPELINES WITHIN TQL?

Most respondents to the employee satisfaction survey (n=29) have been employed with TQL for three years or less. Other respondents ranged up through the ten-to-fifteen-year mark, with none exceeding fifteen years. Seven respondents participated in the Apprenti program with only one of the seven not agreeing that the reduced compensation received during the apprenticeship was a reasonable tradeoff for the TQL Apprenti program benefits. All the TQL Apprenti Program participants indicated they are either extremely likely or moderately likely to continue working with their current employer (TQL) when their term as an apprentice is complete. These findings indicate that the Apprenti program is successfully creating a pipeline of IT professionals within TQL that will gain necessary skills and continue to engage with the organization even within the constraints of the Apprenti program.

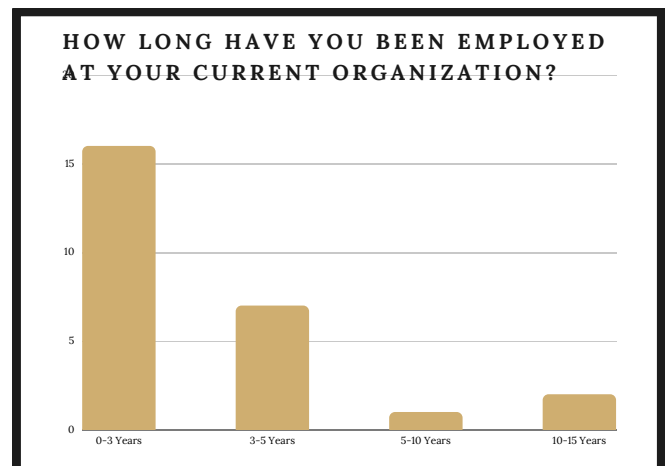


QUESTION 2: WHAT IS THE IMPACT OF AN INTERNALLY SPONSORED, COHORT-BASED, APPRENTICESHIP PROGRAM ON THE RETENTION OF IT STAFF WITHIN TOTAL QUALITY LOGISTICS?

Overall, survey participants indicate they are generally satisfied with their work situation at TQL. Questions related to interest in their work, ability to apply their associated skills, and relationships with their managers were overwhelmingly positive. Most respondents reported they are extremely satisfied or moderately satisfied with these indicators. There begins to be some deviation from this trend with questions related to current workload, opportunities for progression, and physical work environment. The

most significant concern is related to physical work environment with 22.23% of individuals either moderately dissatisfied or neither satisfied nor dissatisfied.

A comparative analysis of data disaggregated by participation in the TQL Apprenti program showed greater or equal satisfaction on all related indicators for program participants. Particular areas of divergence between the two groups include satisfaction with current workload, access to interesting work, the physical environment of the workplace, and relationships with their managers. On each of these questions, TQL Apprenti Program participants scored higher on satisfaction scales. When the data was disaggregated by



years of service, a trend related to dissatisfaction arose. Those respondents indicating employment for 5-10 years (n=2) at TQL displayed overwhelming dissatisfaction on each of the questions on the survey.

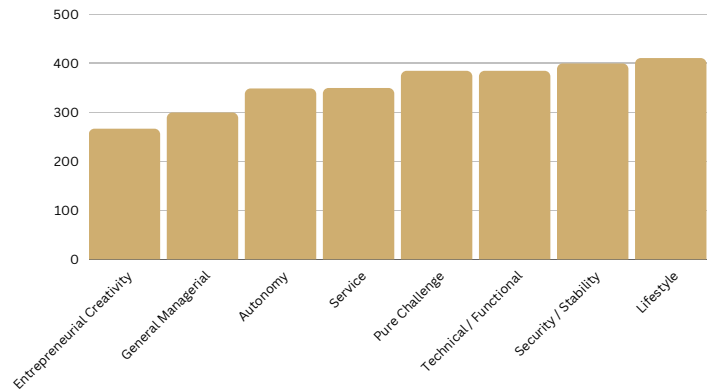
CAREER ANCHOR SURVEY

QUESTION 3: HOW DO SELF-ASSESSED CAREER ANCHORS, AS DEFINED BY SCHEIN, DIFFER BETWEEN PARTICIPANTS IN THE TQL APPRENTI PROGRAM AND TRADITIONAL IT PROFESSIONALS AT TQL?

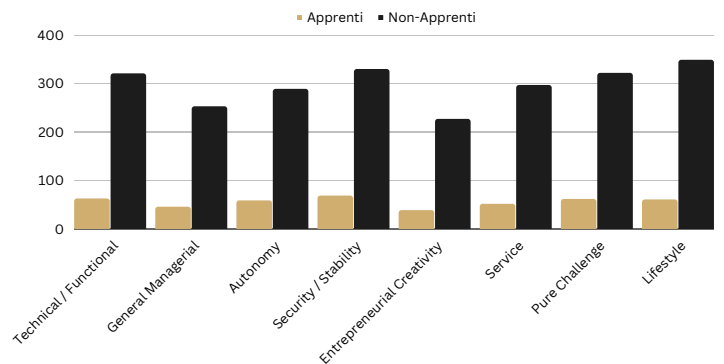
In aggregate, the top career anchor was Lifestyle, with factors such as work-life balance seen as crucial elements to career satisfaction. However, when the data was broken down to Apprenti vs. Non-Apprenti participants, Apprenti participants identified Security and Stability as their primary anchor. Furthermore, all respondents in the Apprenti program had a tenure of fewer than five years.

When the data is disaggregated by tenure alone, the career anchors broke out as Lifestyle for those with 0-3 years of tenure, Security and Stability for those with 3-5 and 5-10 years of tenure, and Lifestyle for those with 10-15 years of tenure.

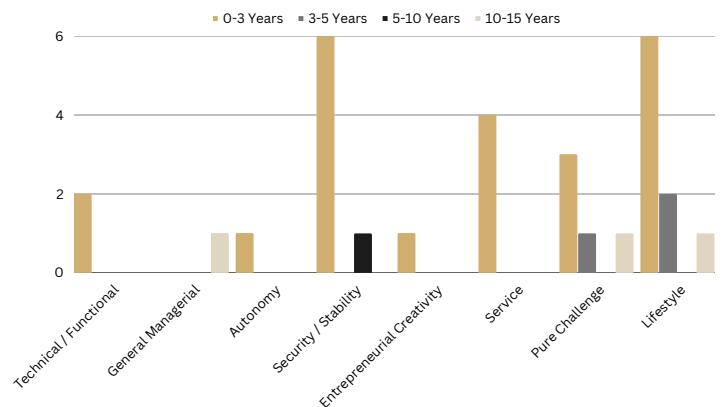
CAREER ANCHOR SCORES - AGGREGATED



SCORES PER CAREER ANCHOR



PARTICIPANTS PER CAREER ANCHOR - BY TENURE





Our findings are not necessarily consistent with current literature on career anchors. Schein and Van Maanen (2016), as well as Igbaria et al. (1995), indicate career anchors are not grouped in a particular career field. However, our data clustered clearly around the Lifestyle and Security-Stability anchors. Chang et al. (2007) did, however, determine three top career anchors among entry level Taiwanese IT workers. Career anchors for this population included Security-Stability, Lifestyle, and Sense of Service-Dedication to a Cause (Chang et al., 2007). This research closely aligns with the data we collected and may address the fact that the majority of our participants have only been with TQL for a short time. Thus, tenure may have more of an impact on the anchor than career choice.

LIMITATIONS

Limitations for this data include a relatively low response rate from the Apprenti participants; Career Anchors survey (n=4) and Employee Satisfaction survey (n=7), as well as a low overall response rate from TQL IT staff. Additionally, our inability to replicate the final career anchor survey element which asks the participants to add 5 points to the anchor with which they most closely align made determining a clear single career anchor for some participants difficult. This led to several participants with multiple “top” anchors.

Another potential limitation to the study was the lack of qualitative data available from the surveys. Additional information on why individuals chose certain answers may have proven helpful in discerning motives for answers.

RECOMMENDATIONS

RECOMMENDATION 1: CONSIDER RETENTION STRATEGIES BASED ON CAREER ANCHORS

Research claims no correlation exists between career choice and career anchor and that employees have differing needs which should be met (at least in attempt) by the employer (Ginzberg & Baroudi, 1988). Furthermore, research now claims the role of the manager holds a greater impact on retention and satisfaction than career anchor alone (Jiang & Klein, 1999). Regardless, research does indicate a positive correlation between an organization meeting individual needs identified through career anchors and overall retention of IT professionals (Chang et al., 2012). It is most likely the case that manager involvement, personal career anchors, and basic work hygiene factors makeup a complex picture of retention and satisfaction for employees.

While TQL already has a robust pay and benefits plan, it is important to consider how future changes to these benefits may affect individuals within the organization. The two dominant career anchors of the TQL population we surveyed, Lifestyle and Security-Stability, are both grounded in meeting psychological needs (Rodrigues, et. al., 2013; Coetzee, et al., 2014; Feldman & Bolino, 1996). Thus, gearing pay and benefits packages towards meeting these needs will likely lead to increased retention overall.

Establishing and publicizing clear criteria for promotions and raises is an organizational career management (OCM) strategy preferred by IT professionals in the Security and Stability anchor (Arnold et al., 2019; Schein, 1993). This group also benefits from access to training and development opportunities that increase their





technical skills and proficiency (Arnold et al., 2019). Continuing to hone their craft in a rapidly changing tech environment is critical in maintaining the job security desired by this group of individuals. The IT field, arguably, evolves and changes more rapidly than other vocations. Those individuals in our survey that identified Technical-Functional competence as their anchor (n= 3), would likely perceive training opportunities in a positive light.

RECOMMENDATION 2: MEASURE & TRACK APPRENTI PARTICIPANT CAREER ANCHORS

When recruiting apprentices, it is critical that potential jobs and future opportunities are clearly defined. This clarity between the organization and the employee allows those exploring career options to have a firm understanding of the job and what it entails as well as what will be required from them in this position (Schein & Van Maanen, 2016). Establishing these norms and expectations up front ensures the employee can determine if they are appropriately aligned for the position

(Schein & Van Maanen, 2016). Schein & Van Maanen (2016) also suggest that upon hire, a career anchor survey should be conducted. This will ensure TQL and the employee are aligned on desires and realistic offerings. It is likely unreasonable to assume TQL, or any company, can provide for every possible career anchor in every possible instance. However, a clear expectation baseline will help both the employee and employer design a career path that is mutually beneficial.

RECOMMENDATION 3: PROBE FURTHER TO DETERMINE THE CAUSE OF DISSATISFACTION FOR INDIVIDUALS IN THE 5-10 YEARS OF SERVICE RANGE & WITH PHYSICAL ENVIRONMENT

The findings related to the individuals in the 5-10 years of service range are concerning, even though the number of respondents in this category is small (n=2). Determining if these sentiments are pervasive in this tenure range is important to establishing cause and potential solutions. Once TQL is able to determine the prevalence of the opinions, they can more easily address the issue with specific retention strategies.

Individuals within the Security-Stability anchor appreciate understanding the criteria for attaining promotions and raises as they navigate their career (Schein, 1993; Arnold et al., 2019). Establishing and publicizing these criteria will help these individuals better understand their career options and how best to navigate their workplace goals and aspirations for the future. The perception of agency in a person's career path has been studied under multiple guiding theories with the consensus being, regardless of theory, that most people want some perception of control over their career path (Lemke, 2021). While those in the Lifestyle anchor tend to focus less on career progression (Schein, 1993; Arnold et al., 2019) understanding the options and what must be done to achieve advancement will allow individuals to make informed decisions when they are motivated to do so.

Research by Coatzee et al. (2014) indicates that incorporating workplace components that appeal to those in the Lifestyle anchor such as flexibility and concern for individual and family welfare, moderated employee work engagement and commitment to the job. When considering retention strategies for the members we surveyed, the ability to maintain their Lifestyle is key. The desire to retain a baseline Lifestyle may be further impacted by the recent change in work-life balance post-COVID, but that question is beyond the scope of this research.





CONCLUSION

In summary, the Apprenti Program has proven to be a successful talent pipeline strategy for TQL. Participants in the program yield the benefits of an internally-sponsored, cohort-based experience while TQL reaps the benefits of a sustainable talent pipeline. Therefore, we recommend that TQL continues to embed the program for the benefit of both the company and Apprenti participants.

Our findings indicate that employees at TQL are generally satisfied with their work, with even higher satisfaction reported by apprentices. The Apprenti program has effectively met the goals set by TQL and the chamber and is a model for other companies to emulate.

Although this study provides valuable insights, there are opportunities for future research. Conducting the Career Anchor Survey without technical limitations would offer a more comprehensive view of TQL's IT workforce. Additionally, increasing the response rate would enable TQL to draw more reliable conclusions. We encourage future research for the mutual benefit of Cincinnati USA Regional Chamber, TQL, and the metropolitan area workforce.

REFERENCES

- Arnold, J., Coombs, C., & Gubler, M. (2019). Career anchors and preferences for organizational career management: A study of information technology professionals in three European countries. *The International Journal of Human Resource Management*, 28(4), 3190-3222.
- Berkowitz, K. (2022, March 7). Community colleges play a critical role in apprenticeship expansion. *New America*. <https://www.newamerica.org/education-policy/edcentral/community-colleges-role-in-apprenticeship-expansion/>
- Bokhari, A. (2022, March 25). 3 best practices for launching an apprenticeship program. *HR Executive*. <https://hrexecutive.com/3-best-practices-for-launching-an-apprenticeship-program/>
- Carlin, D., Gardner, N., Hancock, B., & Weddle, B. (2021, March 1). Building the tech talent pipeline. *McKinsey & Company*. <https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/building-the-tech-talent-pipeline>
- Chang, C.L.H., Jiang, J.J., Klein, G. & Chen, H. (2012). Career anchors and disturbances in job turnover decisions – A case study of IT professionals in Taiwan. *Information & Management*. (49), 309-319.
- Chang, I.C., Hwang, H.G., Liu, C.F., & Siang, S.H. (2007). A study of career anchors and job characteristic preferences of IS students. *Journal of Computer Information Systems*. 47(3), 24-33.
- Christensen, L., Gittleson, J., Smith, M., & Stefanski, H. (2021, October 26). Reviving the art of apprenticeship to unlock continuous skill development. *McKinsey & Company*. <https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/reviving-the-art-of-apprenticeship-to-unlock-continuous-skill-development>
- Christman. (2012). Preparing for success through apprenticeship. (RESOURCES IN TECHNOLOGY AND ENGINEERING). *Technology and Engineering Teacher*, 72(1), 22-28.
- Coetzee, M., Schreuder, D., & Tladinyane, R. (2014). Employees' work engagement and job commitment: The moderating role of career anchors. *SA Journal of Human Resource Management* 12(1), 572-584.

- Consumer Technology Association. (n.d.). Why Tech Companies Should Offer Apprenticeships: A practical guide to understanding the value of apprenticeships, their structure and how they fill talent pipelines. Consumer Technology Association. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjPmJeK9aX5AhUEGIAHSs2A6oQFnoECEMQAQ&url=https%3A%2F%2Fcdn.cta.tech%2Fcta%2Fmedia%2Fmedia%2Fresources%2Fresearch%2Fpdfs%2Fcta-apprenticeship-white-paper.pdf&usg=AOvVaw22F0Jj02s6vmoGULD6UVd6>
- Costa, D. (2021, November 19). STEM labor shortages?: Microsoft report distorts reality about computing occupations. Economic Policy Institute. <https://www.epi.org/publication/pm195-stem-labor-shortages-microsoft-report-distorts/#:%7E:text=The%20report%20and%20Microsoft%20officials,economy%20is%20at%20full%20employment>
- d'Agostino, G., Raitono, M., & Scarlato, M. (2021, August 26). Job mobility and heterogeneous returns to apprenticeship training in Italy. *British Journal of Industrial Relations*. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/bjir.12633>
- El-Masri, M., Al-Yafi, K., Addas, S., & Tarhini, A. (2018). Individual Determinants of IT Occupational Outcomes. *Communications of the Association for Information Systems*, 42, 481–507. <https://doi.org/10.17705/1cais.04218>
- Ertürk, A., & Vurgun, L. (2015). Retention of IT professionals: Examining the influence of empowerment, social exchange, and trust. *Journal of Business Research*, 68(1), 34–46. <https://doi.org/10.1016/j.jbusres.2014.05.010>
- Ford Foundation. (2015, April 16). A Future of Failure? The Flow of Technology Talent into Government and Society. <https://www.fordfoundation.org/work/learning/research-reports/a-future-of-failure-the-flow-of-technology-talent-into-government-and-society/>
- For Employers: Build a skilled workforce and save money with a Registered Apprenticeship. (n.d.). ApprenticeOhio. <https://apprentice.ohio.gov/employers/#benefits>
- Feldman, D.C., & Blino, M.C. (1996) Careers within careers: Reconceptualizing the nature of career anchors and their consequences. *Human Resource Management Review*, 6(2), 89–112.
- Ginzberg, M.J., and Baroudi, J.J. MIS careers—a theoretical perspective. *Communication of the ACM*. 31. 5 (May 1988), 586–594.

- Goger, A. & Sinclair, C. (2021, January 27). Apprenticeships are an overlooked solution for creating more access to quality jobs. Brookings. <https://www.brookings.edu/blog/the-avenue/2021/01/27/apprenticeships-are-an-overlooked-solution-for-creating-more-access-to-quality-jobs/>
- Greeno, J. & Gresalfi, M. (2008). Opportunities to learn in practice and identity. In P. A. Moss, D. C. Pullin, J. P. Gee, E. H. Haertel, & L. J. Young (Eds.), *Assessment, equity, and opportunity to learn* (pp. 170–199). New York: Cambridge University Press.
- Hand, V., & Gresalfi, M. S. (2015). The joint accomplishment of identity. *Educational Psychologist*, 50(3), 190–203.
- Hebbar, L., le Fevre, L., Bischoff, U., Wendt, S., Broek, M., & Austin, K. (2015, July). Evaluation of the TechSF Workforce Innovation Partnership. WestED. <https://www.wested.org/resources/techsf-workforce-innovation-partnership/>
- Igbaria, M. Meredith, G. & Smith, D. C. (1995) Career orientations of information systems employees in South Africa. *Journal of Strategic Information Systems* 4(4), 310–340.
- Imel, S. (1999). Using groups in adult learning: Theory and practice. *The Journal of Continuing Education in the Health Professions*, 19(1), 54–61. <https://doi.org/10.1002/chp.1340190107>
- Imel, S. (2002). Adult learning in cohort groups. Practice application brief no. 24. Clearinghouse on Adult, Career, and Vocational Education. 3–4.
- Jiang, J. J., & Klein, G. (1999). Supervisor Support and Career Anchor Impact on the Career Satisfaction of the Entry-Level Information Systems Professional. *Journal of Management Information Systems*, 16(3), 219–240. <https://doi.org/10.1080/07421222.1999.11518262>
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University.
- Lemke, D. L. (2021). Perceptions of Career Agency and Career Calling in Mid-Career: A Qualitative Investigation. *Journal of Career Assessment*, 29(2), 239–262. <https://doi.org/10.1177/1069072720956982>
- Lerman, R. (n.d.). Apprenticeships: Helping Youth Develop the Skills Needed by Today’s Employers. Wisconsin Family Impact Seminars, 10–18.
- Meldrum, S. (2021). Group Career Coaching – A Critical Pedagogical Approach. *The Journal for Specialists in Group Work*, 46(2), 214–225. <https://doi.org/10.1080/01933922.2021.1929619>

-
- Muehleemann, S., Wolter, S.C., & Wüest, A. (2009, December 1). Apprenticeship training and the business cycle - Empirical Research in Vocational Education and Training. SpringerOpen. <https://ervet-journal.springeropen.com/articles/10.1007/BF03546485>
 - Reiss, R. (2021, November 22). Technology Apprenticeships: A New Way For Entry Level Talent To Jumpstart Their Careers Post High School. Forbes. <https://www.forbes.com/sites/robertreiss/2021/11/22/technology-apprenticeships-a-new-way-for-entry-level-talent-to-jumpstart-their-careers-post-high-school/?sh=27ffb9b345d3>
 - Rupietta, & Backes-Gellner, U. (2018). How firms' participation in apprenticeship training fosters knowledge diffusion and innovation. *Zeitschrift Für Betriebswirtschaft*, 89(5), 569–597. <https://doi.org/10.1007/s11573-018-0924-6>
 - Schein, E. H. (1993). *Career anchors: Discovering your real values*. Josey-Bass/Pfeiffer.
 - Schein, E. H. & Van Maanen, J. (2016). Career anchors and job/role planning: Tools for career and talent management. *Organizational Dynamics* (45), 165–173.
 - Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher*, 27(2), 4–13.
 - Spaid, & Duff, E. D. (2009). Working Adults in Accelerated Cohorts: More than a Learning Community. *The Journal of Continuing Higher Education*, 57(2), 104–109. <https://doi.org/10.1080/07377360902967437>
 - Swayze, & Jakeman, R. C. (2014). Student Perceptions of Communication, Connectedness, and Learning in a Merged Cohort Course. *The Journal of Continuing Higher Education*, 62(2), 102–111. <https://doi.org/10.1080/07377363.2014.915446>
 - Taylor, T. (2017, May 9). Silicon Valley benefits from new tech apprentices. HR Dive. <https://www.hrdive.com/news/silicon-valley-benefits-from-new-tech-apprentices/442232/>
 - Teitel. (1997). Understanding and harnessing the power of the cohort model in preparing educational leaders. *Peabody Journal of Education*, 72(2), 66–85. https://doi.org/10.1207/s15327930pje7202_4
 - The Bottom Line: Apprenticeships Are Good for Business. (2014, July 14). Center for American Progress. <https://www.americanprogress.org/article/the-bottom-line-apprenticeships-are-good-for-business/>

APPENDIX A - EMPLOYEE SATISFACTION SURVEY

The purpose of this survey is to collect feedback on your satisfaction as an employee as a part of a Vanderbilt University Doctoral Capstone. This data will also be used to inform your organization on what IT professionals value in a career. All data is anonymous, and you may opt out at anytime by contacting the researchers at emily.k.myers@vanderbilt.edu or kevin.m.stamps@vanderbilt.edu. We appreciate your willingness to participate.

Please click the arrow at the bottom right to access the survey.

- How long have you been employed as an IT professional with your current organization?
 - Employed 0-3 Years (36 months or less)
 - Employed 3-5 Years (37-60 months)
 - Employed 5-10 Years (61-120 months)
 - Employed 10-15 Years (121-180 months)
 - Employed 15-20 Years (181-240 months)
 - Employed 20+ Years

- Are you currently a participant in the Apprenti (TQL Apprenticeship Program) program OR an Apprenti (TQL Apprenticeship Program) graduate?
 - Yes
 - No

- If you received or are receiving reduced compensation during your time as an apprentice, do you feel the benefits of the Apprenti program outweighed or will outweigh the reduced compensation?
 - Yes
 - No

- How likely are you to continue to work with your current employer after the obligated term of service in the TQL Apprenticeship Program (Apprenti)?
 - Extremely likely
 - Moderately likely
 - Unsure
 - Moderately unlikely
 - Extremely unlikely

- How satisfied or dissatisfied are you with your ability to do interesting work in your role?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

-
- How satisfied or dissatisfied are you with your ability to apply your skills in this role?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

 - How satisfied or dissatisfied are you with your current workload?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

 - How satisfied or dissatisfied are you with your opportunities for career progression?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

 - How satisfied or dissatisfied are you with the physical environment at your workplace?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

 - How satisfied or dissatisfied are you with your relationship with your manager?
 - Extremely satisfied
 - Moderately satisfied
 - Neither satisfied nor dissatisfied
 - Moderately dissatisfied
 - Extremely dissatisfied

APPENDIX B - CAREER ANCHOR SURVEY

The purpose of this survey is to investigate career anchors of IT professionals as a part of a Vanderbilt University Doctoral Capstone. This data will also be used to inform your organization on what IT professionals value in a career. All data is anonymous, and you may opt out at anytime by contacting the researchers at emily.k.myers@vanderbilt.edu or kevin.m.stamps@vanderbilt.edu. We appreciate your willingness to participate.

Please click the arrow at the bottom right to access the survey.

- How long have you been employed as an IT professional with your current organization?
 - Employed 0-3 Years (36 months or less)
 - Employed 3-5 Years (37-60 months)
 - Employed 5-10 Years (61-120 months)
 - Employed 10-15 Years (121-180 months)
 - Employed 15-20 Years (181-240 months)
 - Employed 20+ Years

- Are you currently a participant in the Apprenti (TQL Apprenticeship Program) program OR an Apprenti (TQL Apprenticeship Program) graduate?
 - Yes
 - No

For each of the items that follow, rate how true that statement is for you.

	Never	Seldom	Often	Always
1. I want to be so good at what I do that others will seek my expert advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am most fulfilled in my work when I have been able to integrate the efforts of others toward a common task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I dream of having a career that will allow me the freedom to do a job in my own way and on my own schedule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I am always on the lookout for ideas that would permit me to start my own enterprise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Security and stability are more important to me than freedom and autonomy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I would rather leave my organization than be put into a job that would compromise my ability to pursue personal and family concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I will feel successful in my career only if I have a feeling of having made a real contribution to the welfare of society.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I dream of a career in which I will always be challenged by ever more difficult problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I will feel successful in my career only if I can develop my skills to an ever increasing level of competence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I dream of being in charge of a whole organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the items that follow, rate how true that statement is for you.

	Never	Seldom	Often	Always
11. I am most fulfilled in my work when I am completely free to define my own tasks, schedules, and procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I would not stay in an organization that would give me assignments that would jeopardize my job security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Building a business of my own is more important to me than being a high level manager in someone else's organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I have felt most fulfilled in my career when I have been able to use my talents in the service of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I will feel successful in my career only if I have met and overcome increasingly difficult challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I dream of a career that will permit me to integrate my personal, family, and work needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Becoming a senior functional or technical manager in my area of expertise is more attractive to me than becoming a general manager.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I will feel successful in my career only if I achieve the autonomy and freedom to define my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I usually seek jobs in organizations that will give me a sense of stability and security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I feel most fulfilled when I have been able to build something that is primarily the result of my own skill and effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the items that follow, rate how true that statement is for you.

	Never	Seldom	Often	Always
21. I will feel successful only if I become a high level general manger in some organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Using my talents to make the world a better place to live is what drives my career decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I have been most fulfilled in my career when I have been able to solve seemingly unsolvable problems or won out over seemingly impossible odds.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I feel successful in life only if I have been able to balance my personal, family, and career requirements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I dream of a career that will allow me to feel a sense of stability and security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I would rather leave my organization than accept a rotational assignment that would take me out of my area of expertise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Balancing the demands of my personal and professional life is more important to me than a high level managerial position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I dream of being in a career that makes a real contribution to humanity and society.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I will feel successful in my career only if I have created an enterprise of my own based on my own ideas and skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Becoming a general manager is more attractive to me than becoming a senior functional manager in my area of expertise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the items that follow, rate how true that statement is for you.

	Never	Seldom	Often	Always
31. The chance to do a job in my own way, free of rules and constraints, is very important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I prefer work opportunities that strongly challenge my problem solving and competitive skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I dream of starting up and building my own business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I would rather leave my organization than accept a position that would undermine my ability to be of service to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I am most fulfilled in my work when I have been able to use my special skills and talents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I would rather leave my organization than accept a job that would take me away from the path to general management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I am most fulfilled in my worklife when I feel that I have complete financial and employment security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I would rather leave my organization than accept a job that would reduce my autonomy and freedom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I have always sought out work opportunities that minimize interference with my personal and family concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Working on problems that are difficult to solve is more important to me than achieving a high level managerial position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>